Service Manual

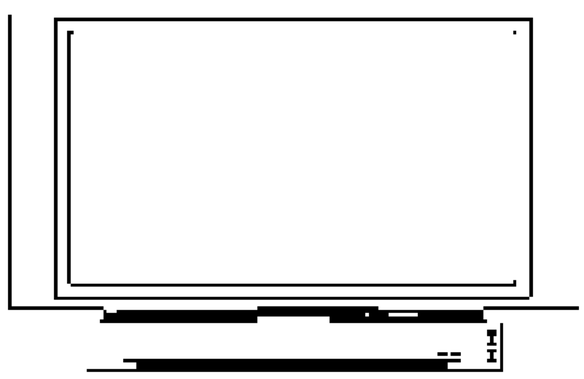
ORDER NO. MKE0409853C1

B2

Service Manu

Multi Media Display

- PT-43LCX64
  PT-50LCX64
  PT-60LCX64



PbF
Solder Lead free

Panasonic®

1.1 GENERAL GUIDELINES

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC Plug before disassembling this unit.
3. It is advisable to use an isolation transformer in the AC supply before servicing.
4. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
5. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations etc. are properly installed.
6. After servicing, be sure to restore the wires, leads, insulation barriers, shields, etc.
7. After servicing, make the leakage current checks to prevent the customer from being exposed to shock hazards.

Caution:

Use a separate Isolation Transformer for this unit when servicing.

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1.2 LEAKAGE CURRENT COLD CHECK

TOP PREVIOUS NEXT

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.

2. For physically operated power switches, turn power on. Otherwise skip step 2.

3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the readingshouldbebetween 1 MΩ and 12 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

TOP PREVIOUS NEXT

1.3 LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet.

   Do not use a isolation transformer for this check.

2. Connect a 1.5 kΩ, 10 W resistor, in parallel with a 0.15 µF capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.

3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.

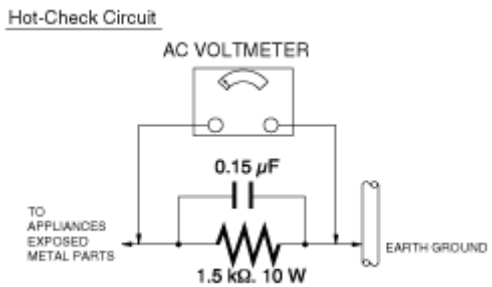
4. Check each exposed metallic part, and measure the voltage at each point.

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.

6. The potential at any point should not exceed 0.75 V RMS.

   A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and thereceivershouldbe repaired and rechecked before it is returned to the customer.

Figure 1



1.4 UV-PRECAUTION

TOP PREVIOUS NEXT

1. Be sure to disconnect the AC Plug when replacing the lamp.

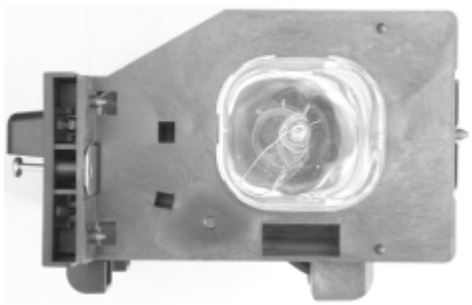
2. Since the lamp reaches a very high temperature during its operation, wait until it has completely cooled off when replacing the Lamp Unit.

3. The lamp emits small amounts of UV-Radiation.

   Avoid direct-eye contact by covering the Lamp and wearing the UV cut protective glass.

4. The high pressure lamp involves a risk of explosion.

Figure 2



This product has a High Intensity Discharge (HID) lamp that contains a small amount of mercury. It also contains lead in some components. Disposal of these materials may be regulated in your community due to environmental considerations.
For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <http://www.eiae.org.>

TOP PREVIOUS NEXT

2 PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistorsandsemiconductor"chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap,whichshouldbe removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparableconductivematerial).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION :

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD)sufficienttodamage an ES device).

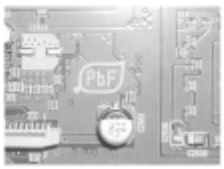
3 ABOUT LEAD FREE SOLDER (PbF)

TOP PREVIOUS NEXT

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF printing on the PCB.
(Please refer to figures.)

Printed case 1



Printed case 2

CAUTION:

- Pb free solder has a higher melting point than standard solder;
  Typically the melting point is 50 °F - 70 °F (30 °C - 40 °C) higher.
  Please use a soldering iron with temperature control and adjust it to 700 °F±20 °F (370 °C± 10 °C).
  In case of using high temperature soldering iron, please be carefull not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100 °F/600 °C).
- All products with the printed circuit board with PbF stamp or printing must be serviced with lead free solder.
  When soldering or unsoldering, completely remove all of the solder from the pins or solder area,
  and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations

Recommended lead free solder composition is Sn96.5 Ag3.0 Cu0.5.

TOP PREVIOUS NEXT

4 SERVICE NOTES

5 DISASSEMBLY/ ASSEMBLY PROCEDURES

TOP PREVIOUS NEXT

5.1 CABINET SECTION

TOP PREVIOUS NEXT

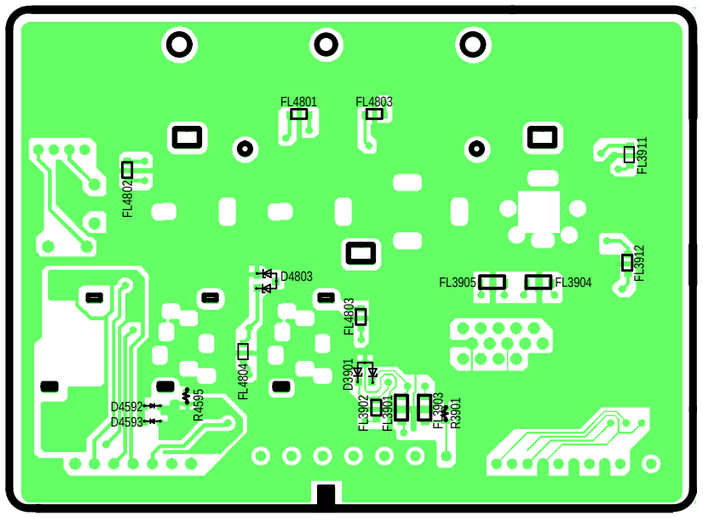
6 ADJUSTMENT PROCEDURES 1

7 TROUBLESHOOTING HINTS FOR BLOCK LEVEL REPAIR

FRONT JACK C.B.A. LSEP3094A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

(COMPONENT SIDE)



LSJB3094

(DUAL PATTERNS)

NOTE:
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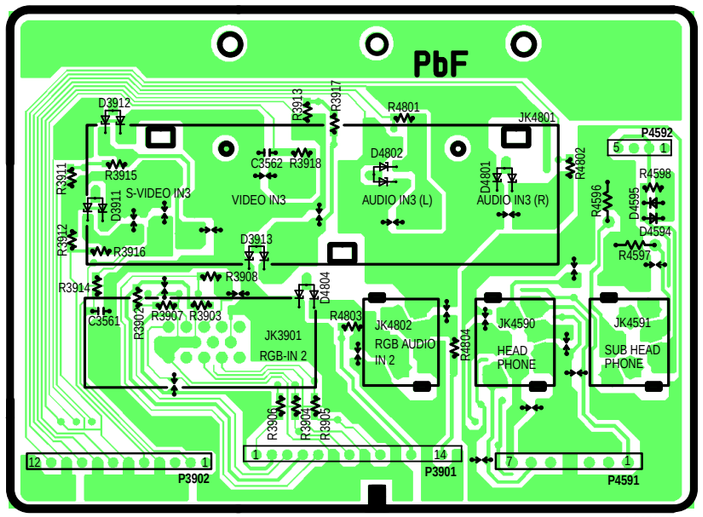
REFER TO BEGINNING OF SCHEMATIC SECTION.

(FOIL SIDE)



LSJB3094

(DUAL PATTERNS)

NETWORK C.B.A. LSEP3097A

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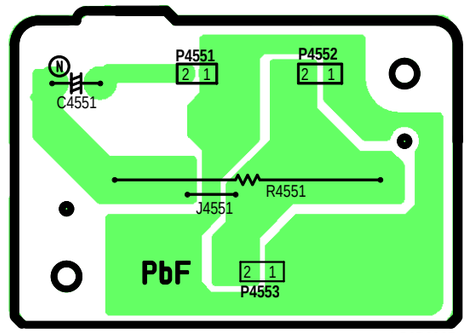

LSJB3097

OPERATION C.B.A. LSEP3149A

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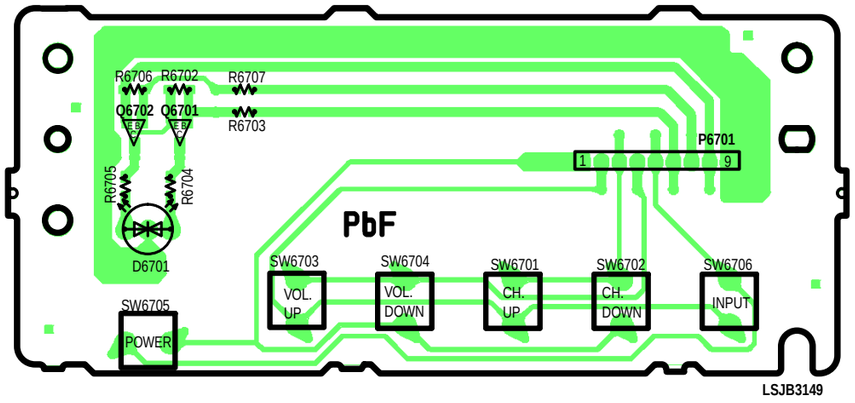
(FOIL SIDE)



LSJB3149

(DUAL PATTERNS)

FRONT JACK C.B.A. LSEP3094A
OPERATION C.B.A. LSEP3149A
NETWORK C.B.A. LSEP3097A
PT-43LCX64/PT-50LCX64/PT-60LCX64

AUDIO AMP C.B.A. LSEP3092A

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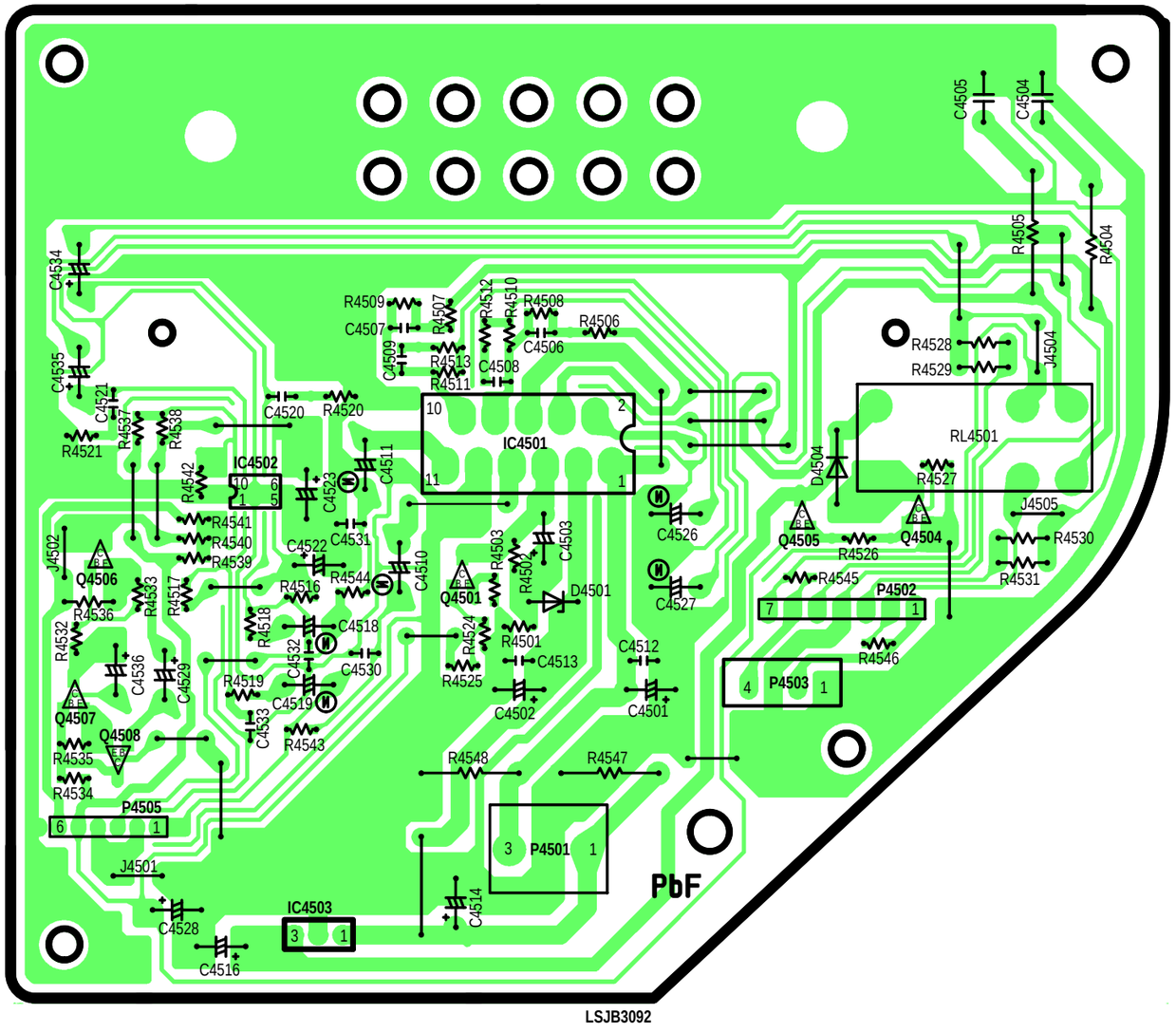

LSJB3092

THERMISTOR 1 C.B.A. LSEP3136A

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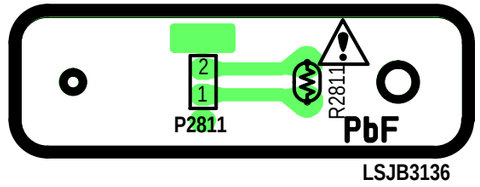

LSJB3136

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

THERMISTOR 2 C.B.A. LSEP3137A

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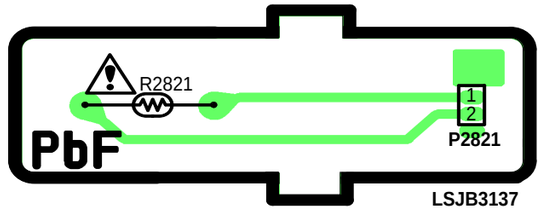

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COVER SWITCH C.B.A. LSEP3098A

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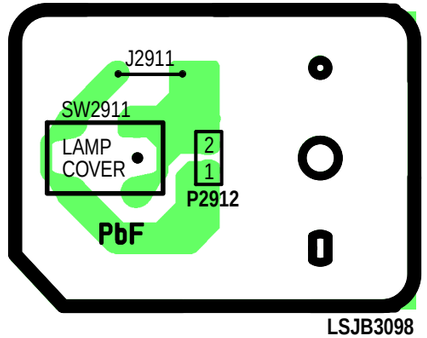


LSJB3098

AUDIO AMP C.B.A. LSEP3092A
THERMISTOR 1 C.B.A. LSEP3136A
THERMISTOR 2 C.B.A. LSEP3137A
COVER SWITCH C.B.A. LSEP3098A
PT-43LCX64/PT-50LCX64/PT-60LCX64

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ● : Test point with a jumper wire across a hole in P.C.B.
   ○ : Test point with no test pin.

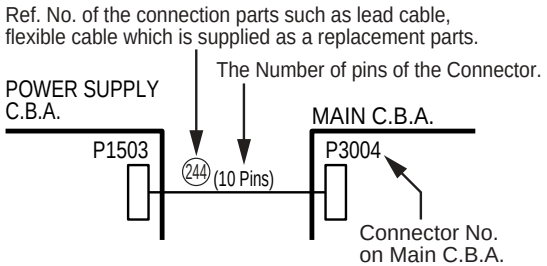
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

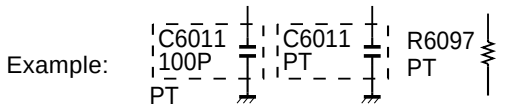
   Example:
   (6.2V).....Zener Voltage

2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to,
   in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.



3. Parts marked "PT" are not used in any models included in this service model.



4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

INTERCONNECTION SCHEMATIC DIAGRAM

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NOTE:
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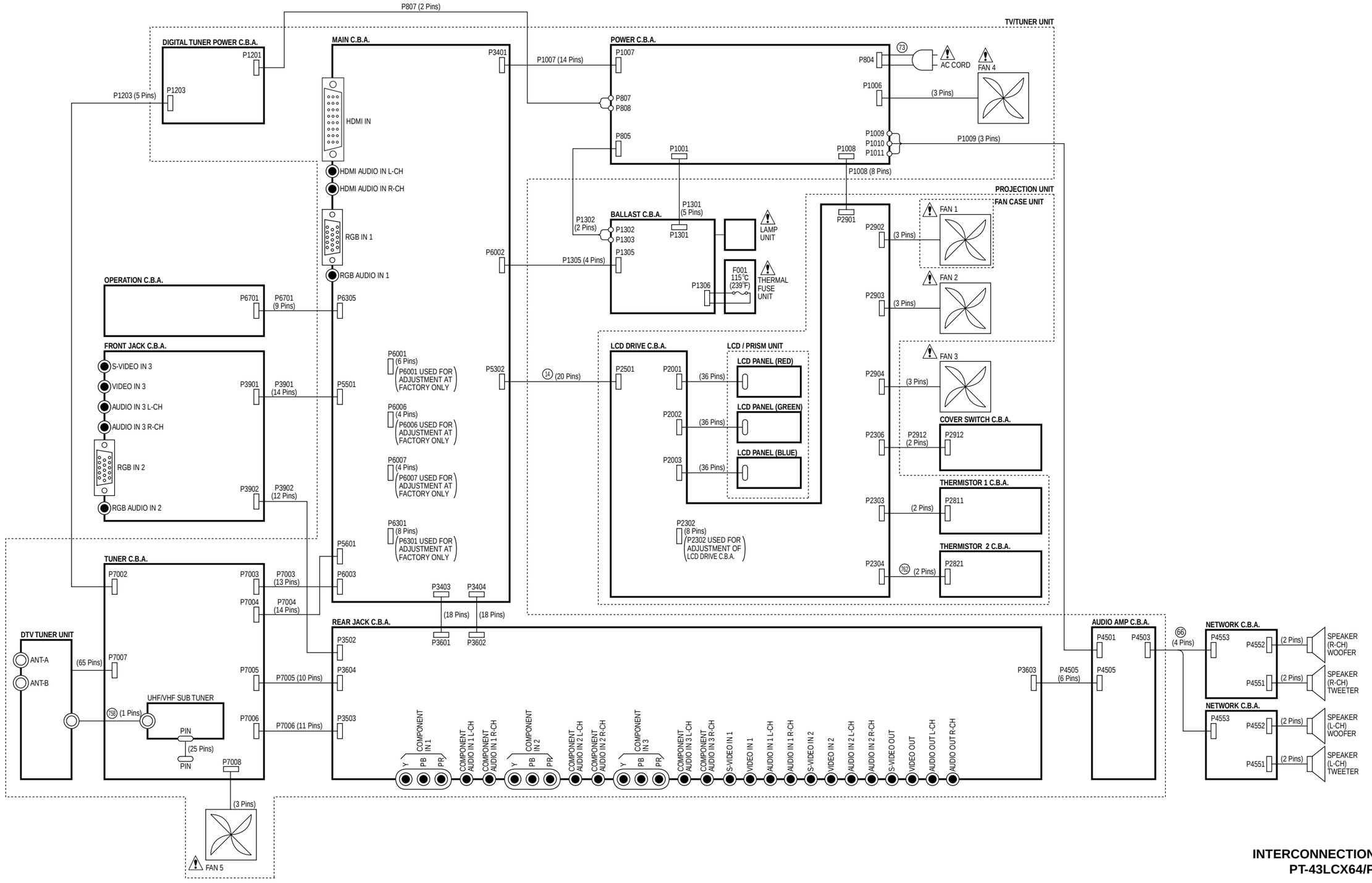
NOTE:
LCD POWER C.B.A. IS SUPPLIED AS A UNIT ONLY.
PLEASE NOTE THAT INDIVIDUAL PARTS ON IT ARE NOT SUPPLIED.
HOWEVER, THE PARTS WITH REF. No. ARE AVAILABLE SEPARATELY AS REPLACEMENT PARTS.



INTERCONNECTION SCHEMATIC DIAGRAM
PT-43LCX64/PT-50LCX64/PT-60LCX64

FRONT JACK SCHEMATIC DIAGRAM

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
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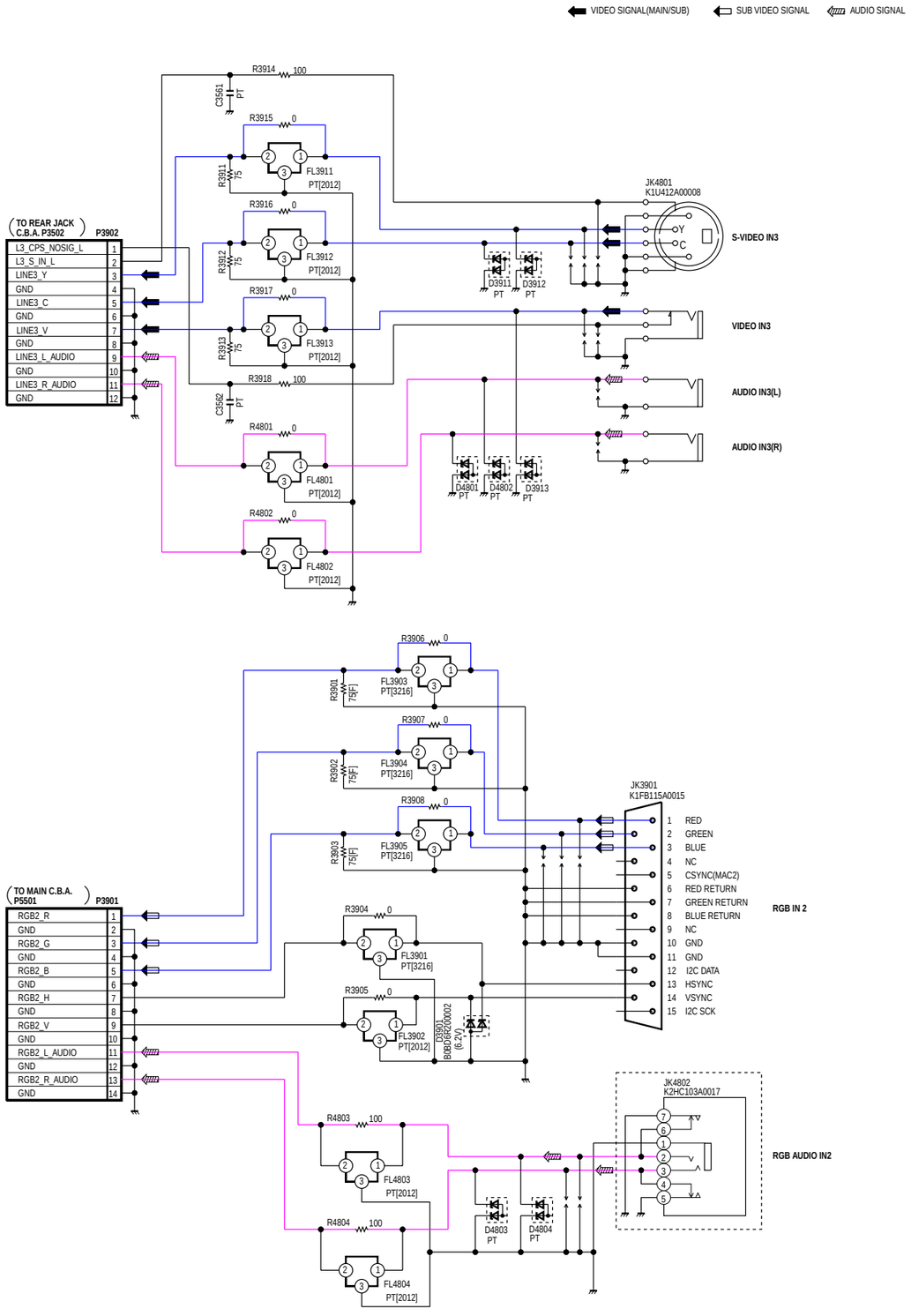

LSJB3094
FRONT JACK SCHEMATIC DIAGRAM
PT-43LCX64/PT-50LCX64/PT-60LCX64

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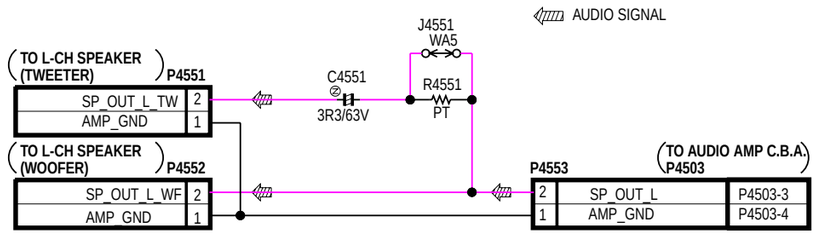
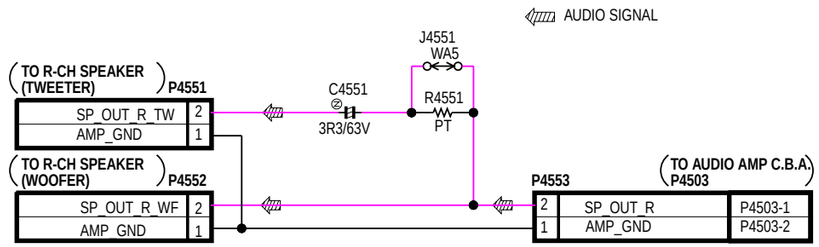
NETWORK SCHEMATIC DIAGRAM
(FOR L-CH SPEAKER)



LSJB3097

NETWORK SCHEMATIC DIAGRAM
(FOR R-CH SPEAKER)



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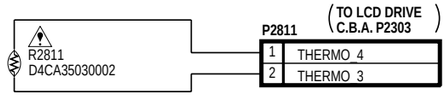
THERMISTOR 1 SCHEMATIC DIAGRAM



LSJB3136

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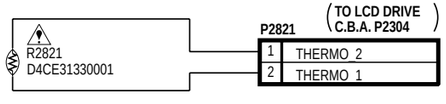
THERMISTOR 2 SCHEMATIC DIAGRAM



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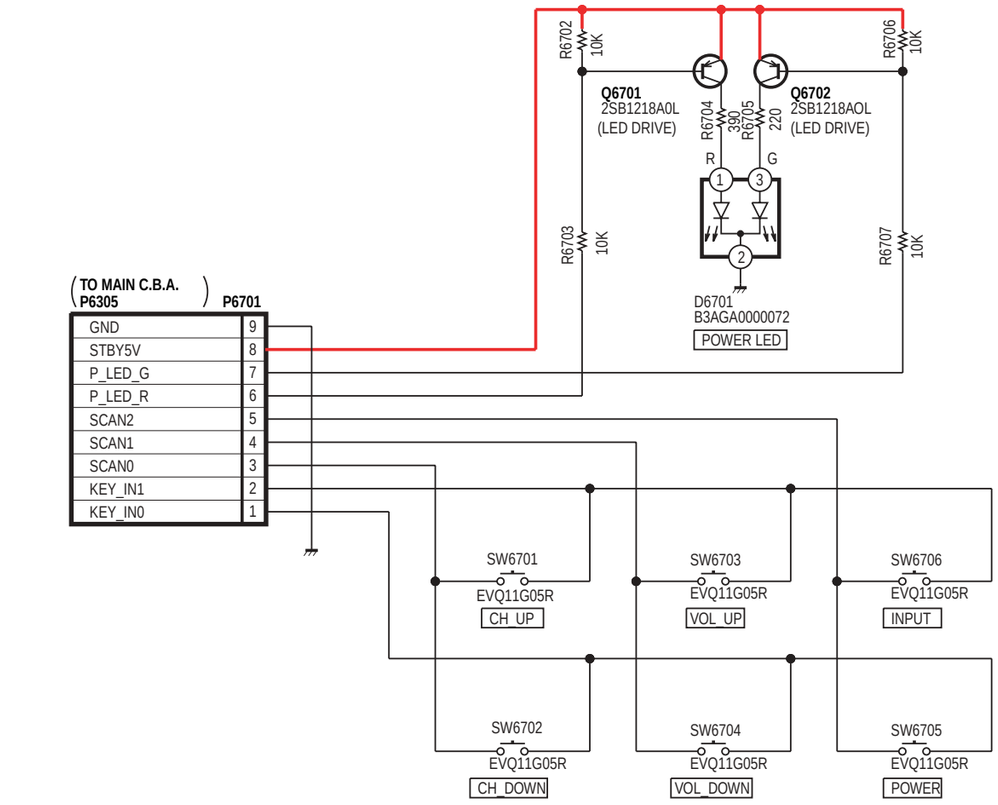
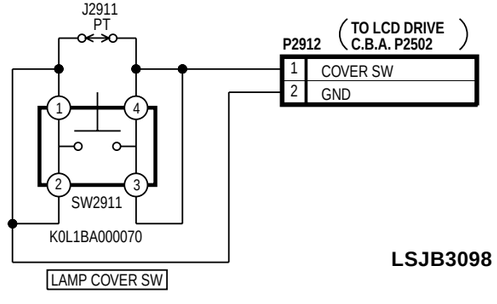
OPERATION SCHEMATIC DIAGRAM



LSJB3149

COVER SWITCH SCHEMATIC DIAGRAM



LSJB3098

AUDIO AMP SCHEMATIC DIAGRAM

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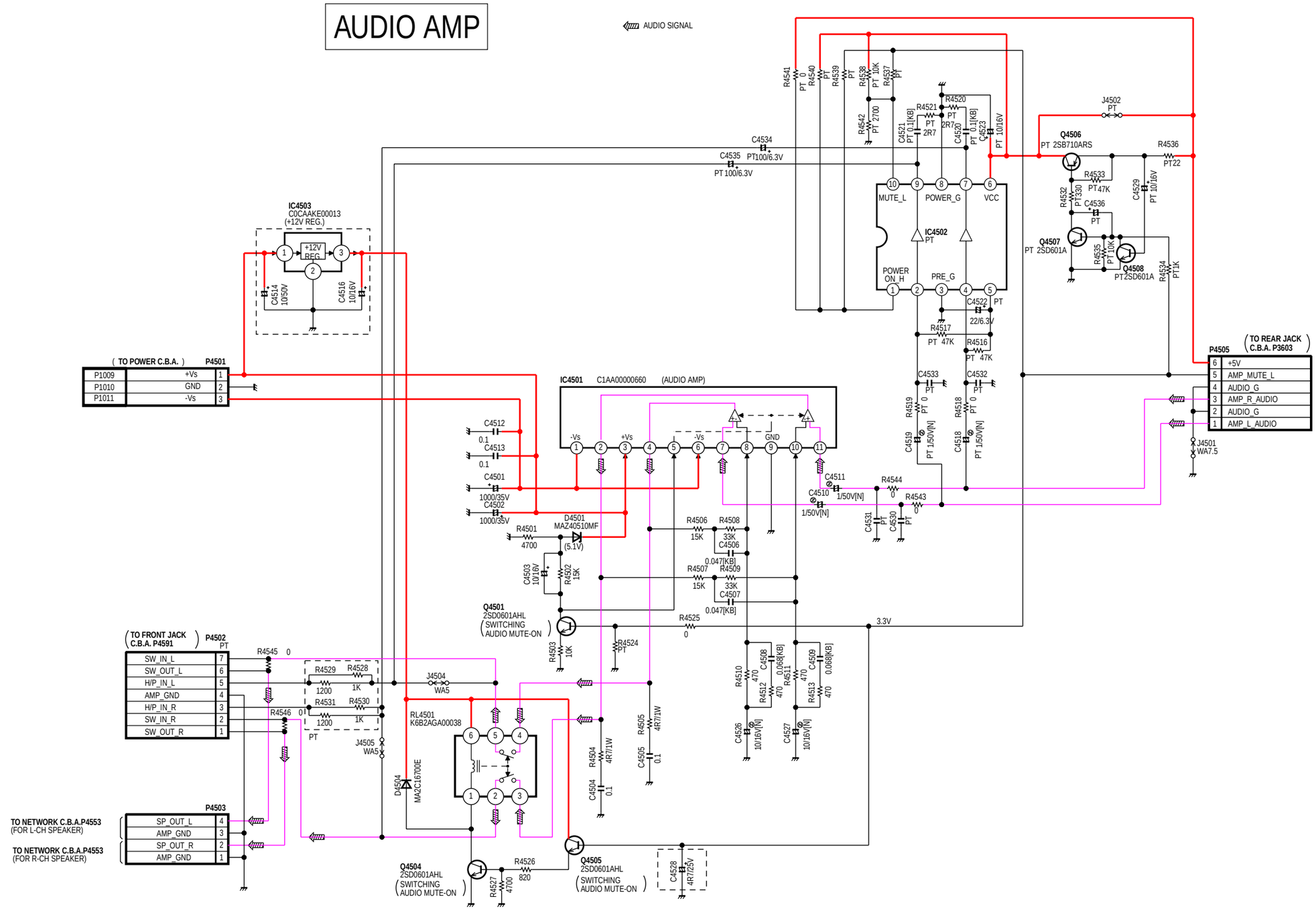

LSJB3092
AUDIO AMP SCHEMATIC DIAGRAM
PT-43LCX64/PT-50LCX64/PT-60LCX64

9.2. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

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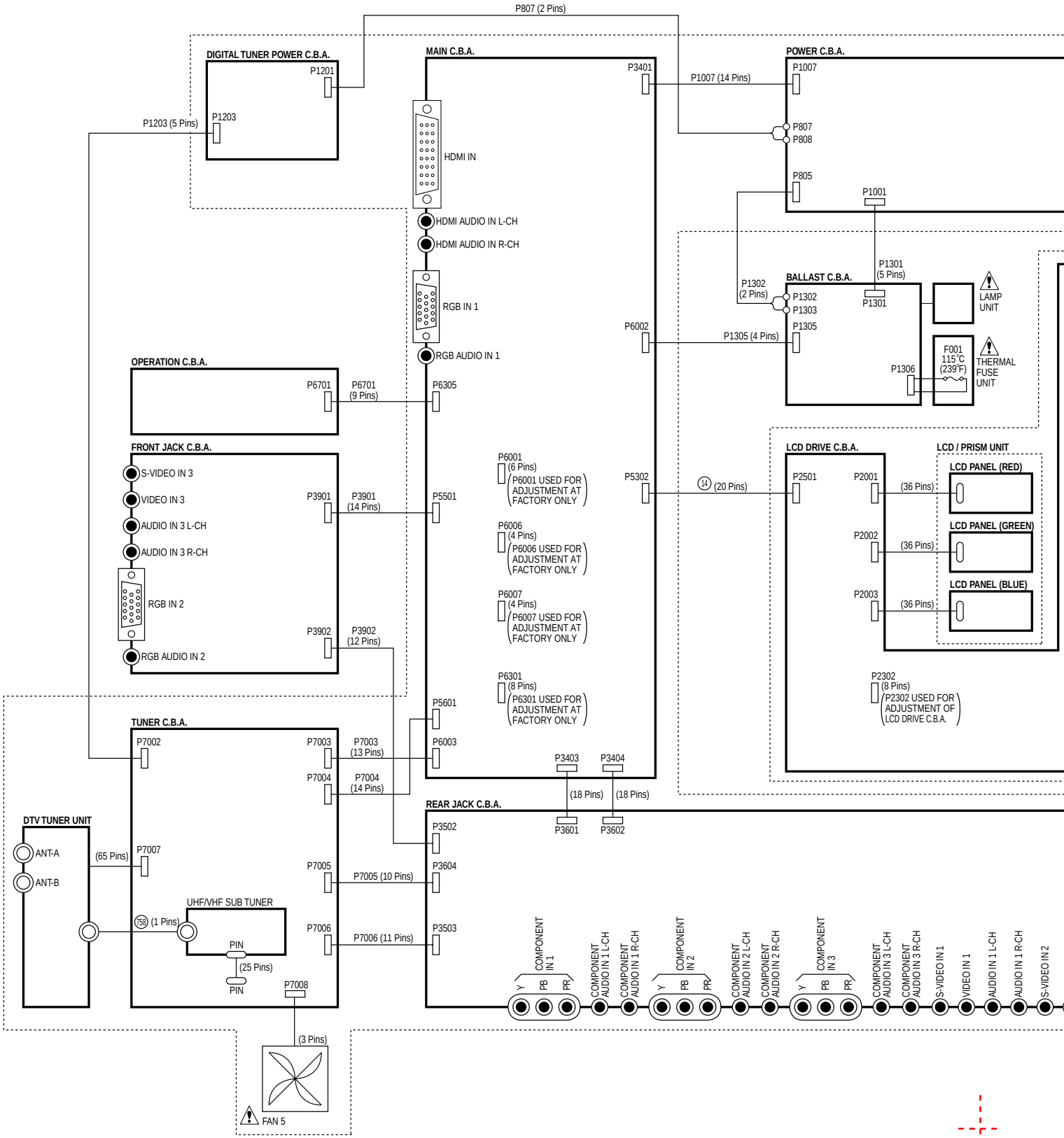

FIRE HAZARD,
A0464 (115℃).
S RISQUES
E

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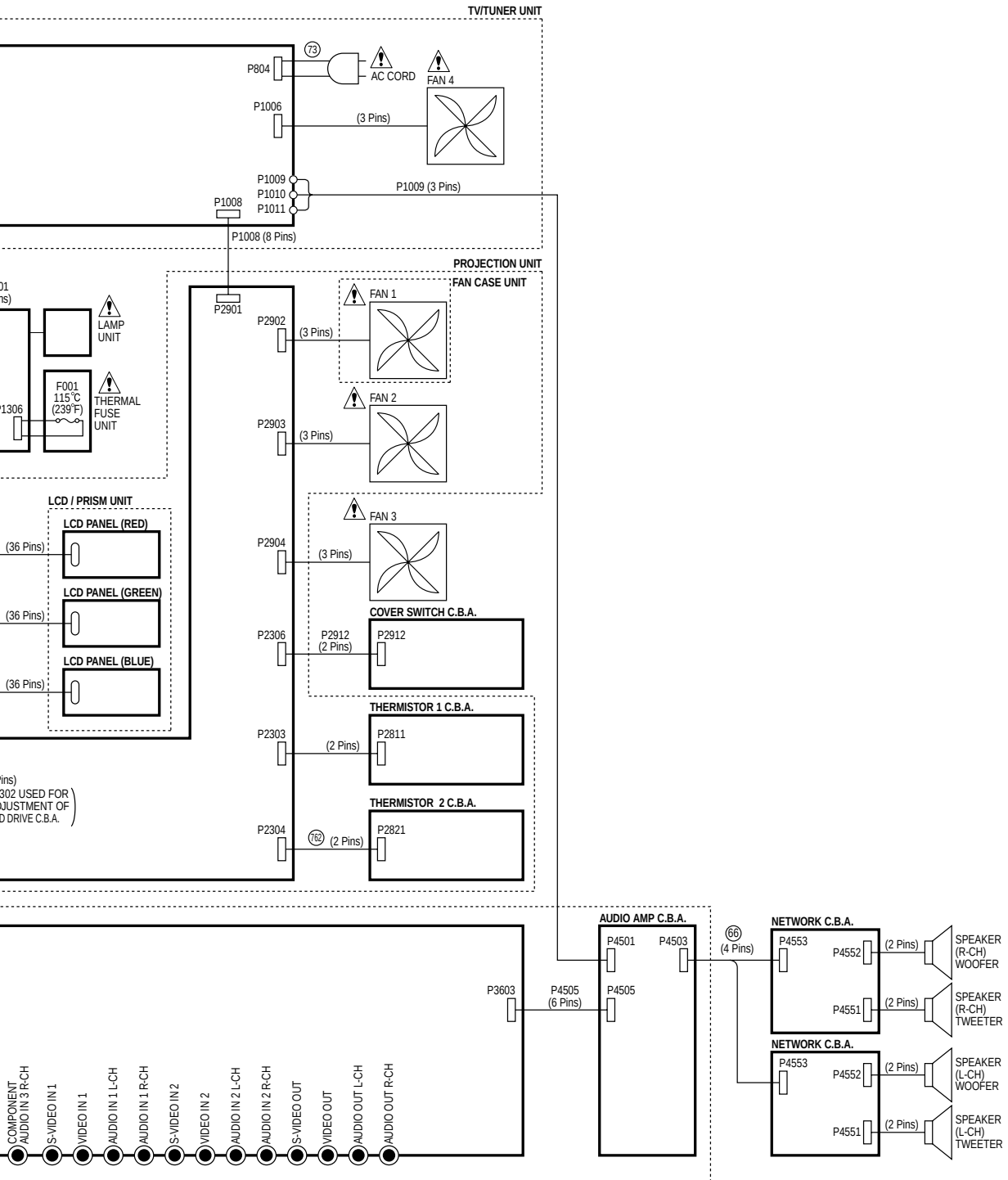

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PT-43LCX64/PT-50LCX64/PT-60LCX64

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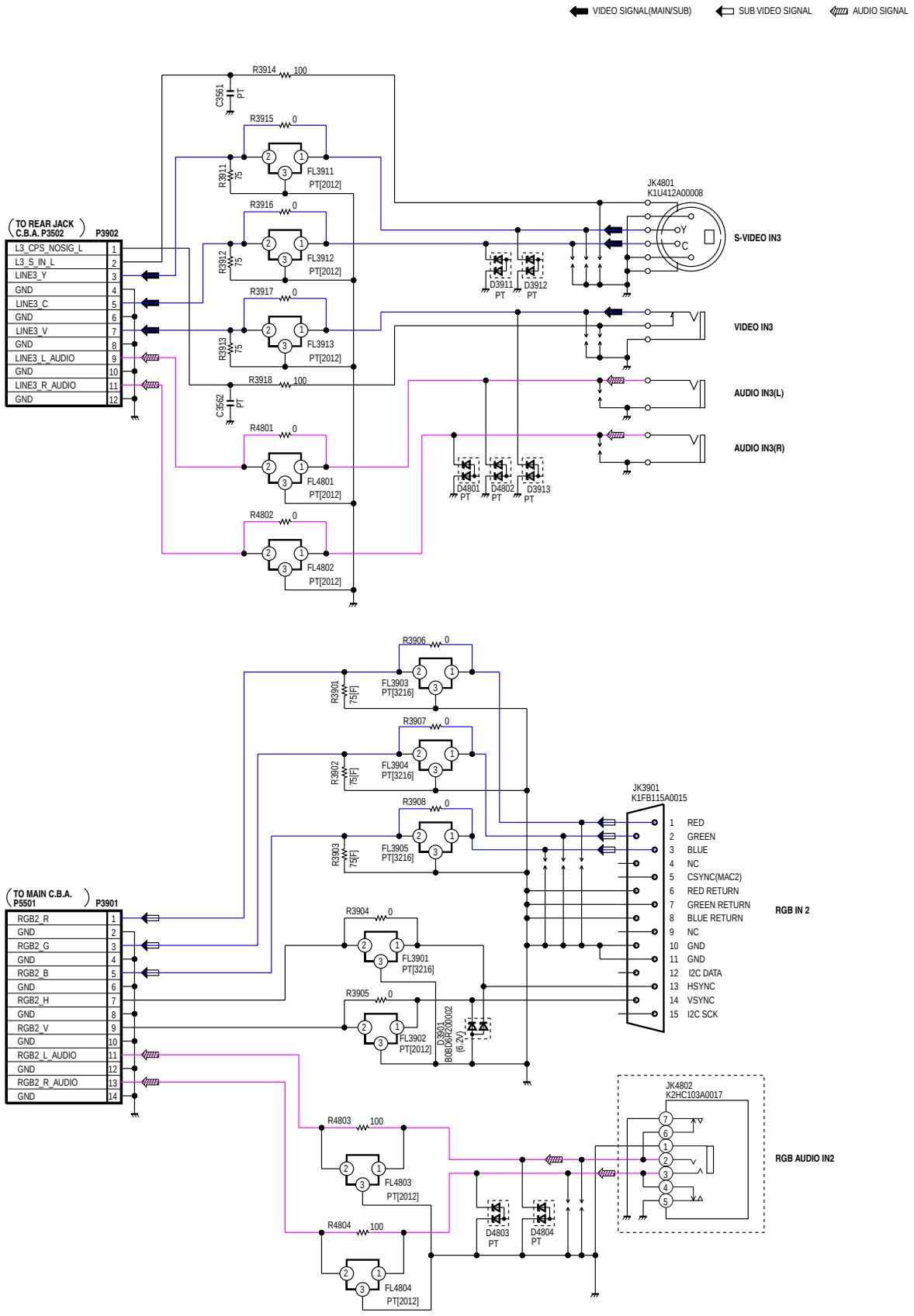

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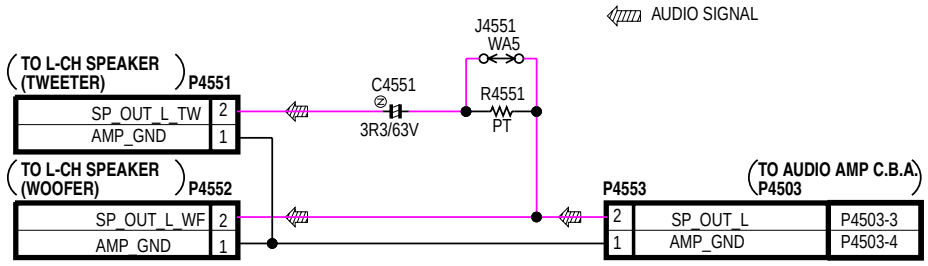
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
PARTS MARKED "PT" ARE NOT USED.

LSJB3094
FRONT JACK SCHEMATIC DIAGRAM
PT-43LCX64/PT-50LCX64/PT-60LCX64

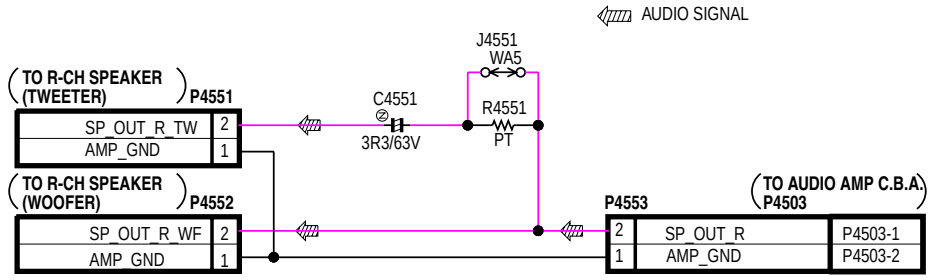
9.4. NETWORK / THERMISTOR 1 / THERMISTOR 2 / OPERATION / COVER SWITC

NETWORK SCHEMATIC DIAGRAM
(FOR L-CH SPEAKER)



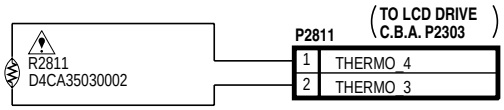
LSJB3097

NETWORK SCHEMATIC DIAGRAM
(FOR R-CH SPEAKER)



LSJB3097

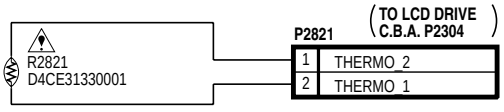
THERMISTOR 1 SCHEMATIC DIAGRAM



LSJB3136

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

THERMISTOR 2 SCHEMATIC DIAGRAM



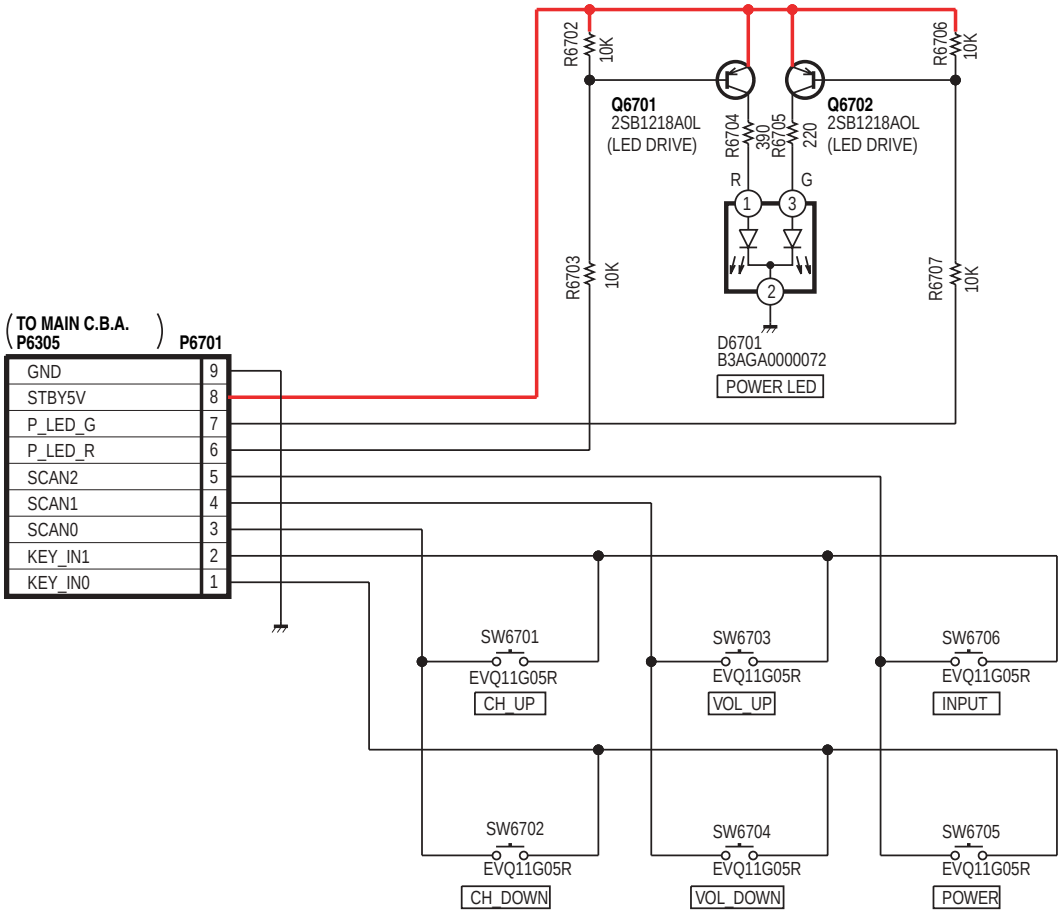
LSJB3137

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

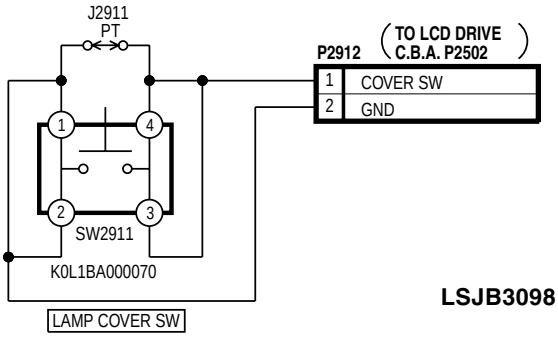
NOTE:
PARTS MARKED "PT" ARE NOT USED.

OPERATION SCHEMATIC DIAGRAM



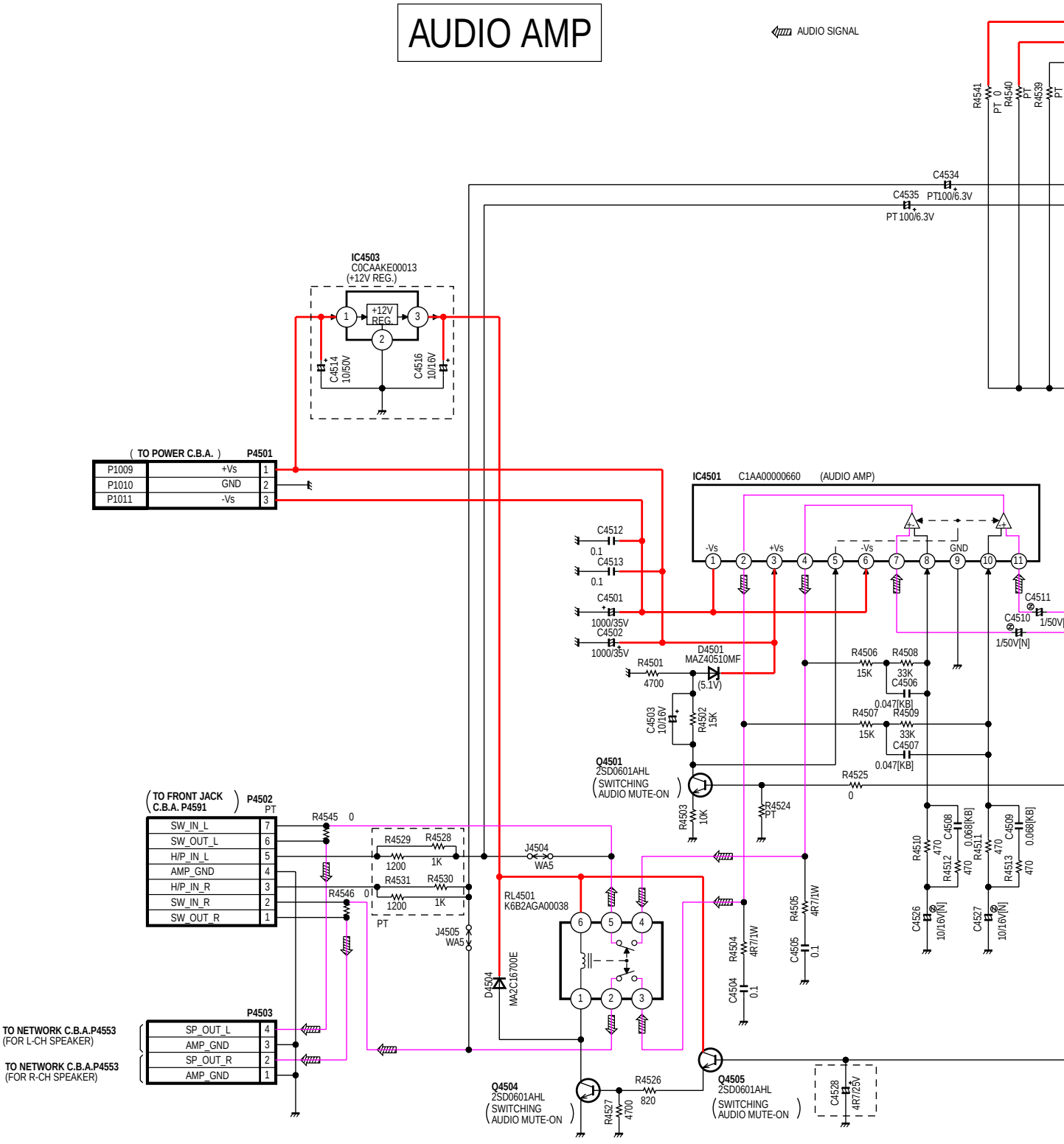
LSJB3149

COVER SWITCH SCHEMATIC DIAGRAM



LSJB3098

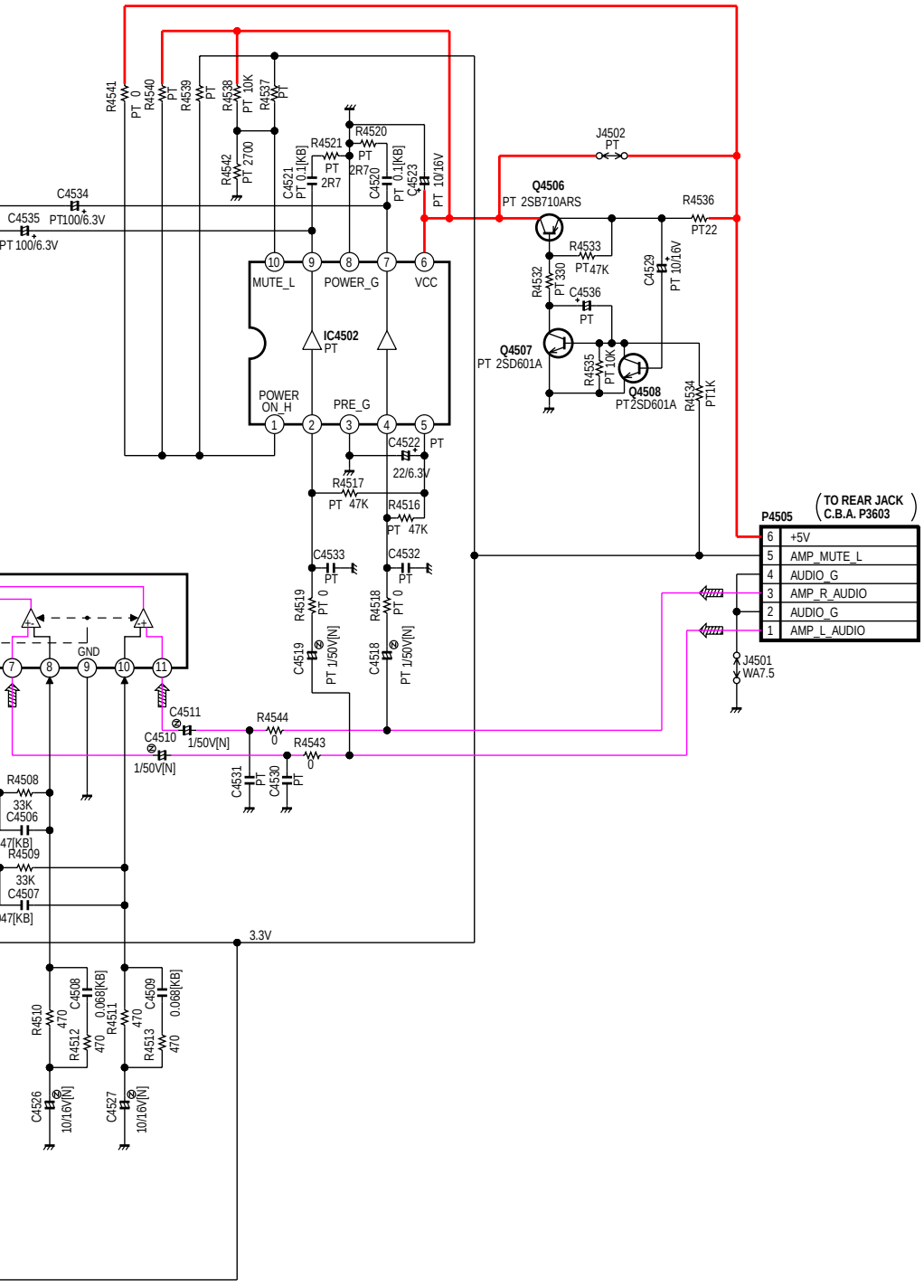
AUDIO AMP SCHEMATIC DIAGRAM



NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
PARTS MARKED "PT" ARE NOT USED.



LSJB3092
AUDIO AMP SCHEMATIC DIAGRAM
PT-43LCX64/PT-50LCX64/PT-60LCX64

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

AUDIO AMP C.B.A.

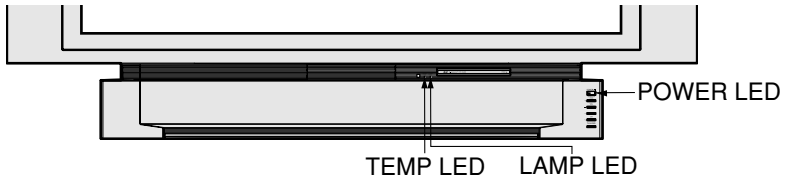
PIN NO.	VOLTAGE
IC4501	
1	-19.2
2	0
3	19.2
4	0
5	15.0
6	-19.2
7	0
8	0
9	0
10	0
11	0
IC4503	
1	19.2
2	0
3	12.0
Q4501	
E	0
C	15.0
B	0
Q4504	
E	0
C	12.0
B	0
Q4505	
E	0
C	12.0
B	0

OPERATION C.B.A.

PIN NO.	VOLTAGE
Q6701	
E	5.0
C	-2.1
B	5.0
Q6702	
E	5.0
C	5.0
B	2.6

LED INDICATIONS FOR ERROR CONDITION

Each LED indication facilitates finding the cause of the error.
When an error is detected, the Lamp comes off and the LED on the front will flash.

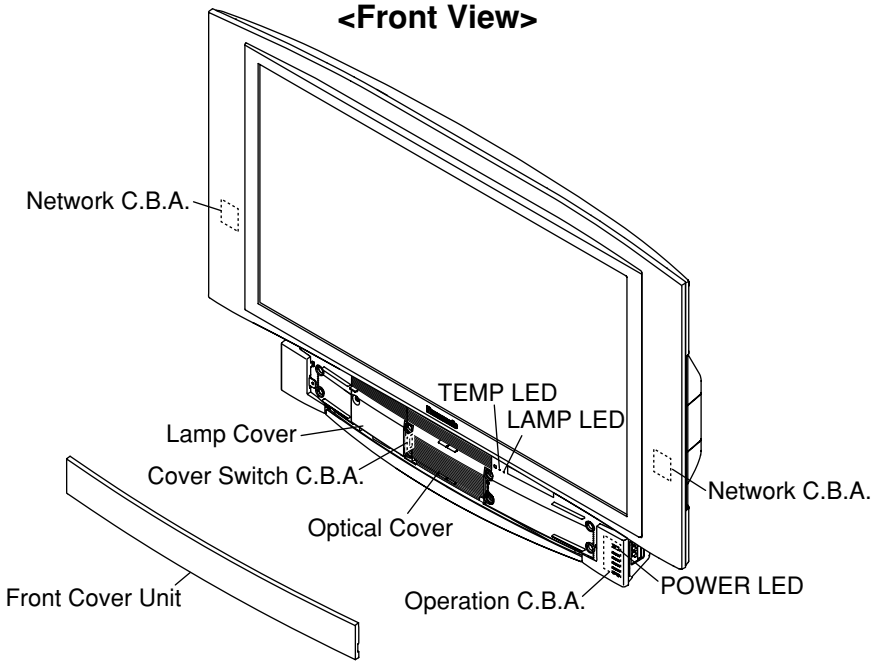


					(Note 2)	(Note 3)
Error No.	**Error Information**	**POWER LED**	**TEMP LED**	**LAMP LED**	**OSD**	**LAMP OFF**
1)	**Fan1, Fan2 or Fan3 stopped**	flashes orange once every 5 seconds	-	-		○
2)	**Lamp Cover open**	flashes orange twice every 5 seconds	-	-		○
3)	**Temperature Sensor shorted or open (Thermistor 1 C.B.A.)**	-	flashes once every 5 seconds	-		○
4)	**Abnormal Temperature (Thermistor 1 C.B.A.)**	-	flashes twice every 5 seconds	-		○
5)	**Ballast Error (abnormal Lamp or Ballast)**	-	-	flashes once every 5 seconds		○
6)	**Ballast Error (abnormal Lamp voltage)**	-	-	flashes twice every 5 seconds		○
7)	**Ballast Error (abnormal temperature)**	-	-	flashes 3 times every 5 seconds		○
8)	**Ballast Error (other causes)**	-	-	flashes 4 times every 5 seconds		○
9)	**Abnormal Voltage on 33 V line**	flashes orange 5 times every 5 seconds	flashes once every 5 seconds	flashes once every 5 seconds		○
10)	**Abnormal Voltage on 9 V line**	flashes orange 6 times every 5 seconds	flashes twice every 5 seconds	flashes twice every 5 seconds		○
11)	**Abnormal Voltage on 5 V line**	flashes orange 7 times every 5 seconds	flashes 3 times every 5 seconds	flashes 3 times every 5 seconds		○
12)	**Abnormal Voltage on 3.3 V line**	flashes orange 8 times every 5 seconds	flashes 4 times every 5 seconds	flashes 4 times every 5 seconds		○
13)	**Abnormal Voltage on -5 V line**	flashes orange 9 times every 5 seconds	flashes 5 times every 5 seconds	flashes 5 times every 5 seconds		○
14)	**Abnormal Voltage on 6.5 V line**	flashes orange 10 times every 5 seconds	flashes 6 times every 5 seconds	flashes 6 times every 5 seconds		○
15)	**Temperature Sensor shorted or open (Thermistor 2 C.B.A.)**	-	flashes 3 times every 5 seconds	-		○
16)	**Abnormal Temperature (Thermistor 2 C.B.A.)**	-	flashes 4 times every 5 seconds	-		○
17)	**Clogged air filter**	-	flashes 5 times every 5 seconds	-	○	○
18)	**DTV Tuner Power Error**	flashes green all the time	-	-		○

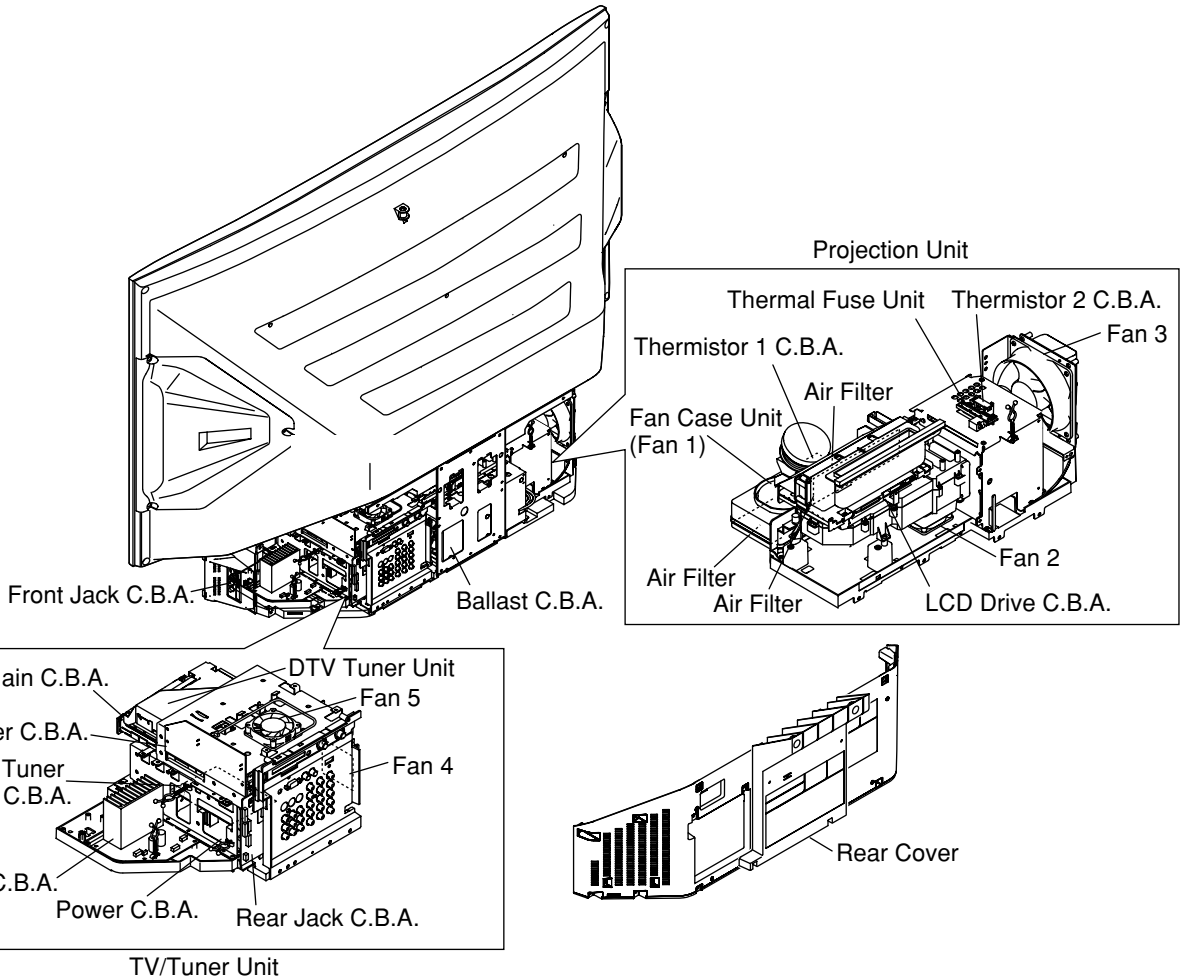
Note:
1. When two or more errors have occurred at the same time, the LED will alternate flash patterns as shown above every 5 seconds.
2. Warning OSD appears when the air filter is clogged.
3. LAMP OFF: The LED will flash immediately after the Lamp comes off.

MAIN PARTS LOCATION

<Front View>



<Rear View>



SERVICE MODE

In this mode, the following information can be confirmed on the screen:

Service Mode (1/3)
- Total Lamp elapsed time
- Current Lamp elapsed time
- The number of Lamp ON **(For reference only)**
- BKSV number read-out

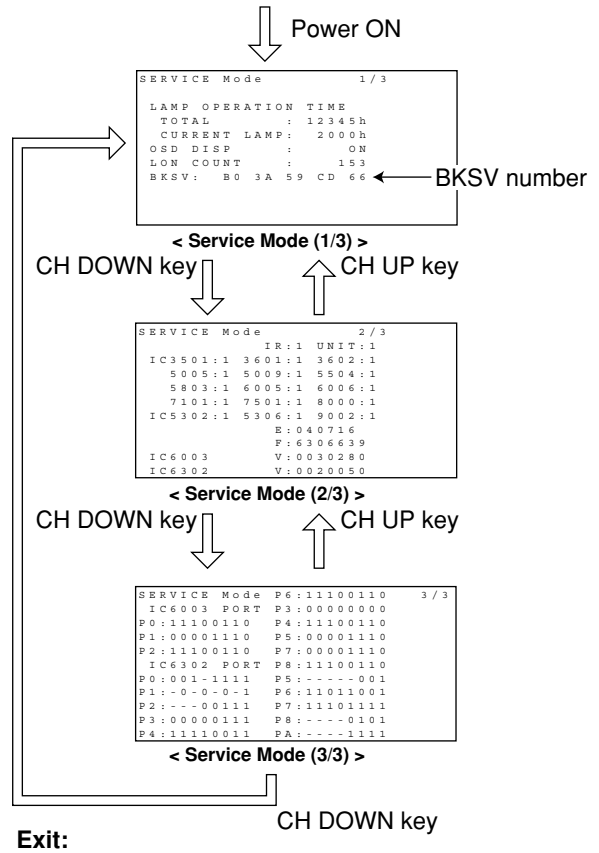
Service Mode (2/3)
- Key detection check
- Communication check for IIC bus on the Main C.B.A.
- Communication check for serial bus on the Main C.B.A.
- EEPROM IC6006 version and build version (**For reference only**)
- EEPROM IC6306 version and build version (**For reference only**)
- IC6003 software version and build version (**For reference only**)
- IC6302 software version and build version (**For reference only**)

Service Mode (3/3)
- IC6003 Port information
- IC6302 Port information

Note:
IC6003: Main Microcontroller on the Main C.B.A.
IC6302: Sub Microcontroller on the Main C.B.A.

Service Mode Map

Enter :
VOLUME DOWN button + TV/VIDEO key
(on the front) (on the remote)
(for more than 5 seconds in power off condition)



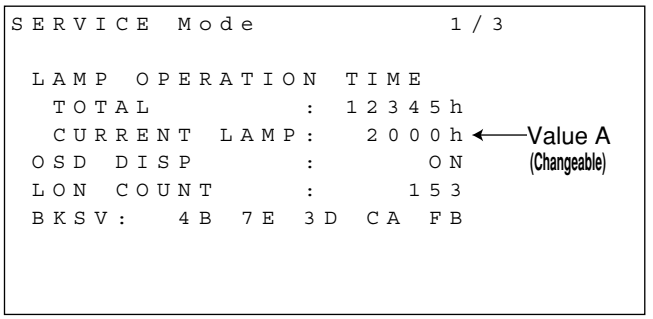
Exit:
Power OFF.
(When turning the power on again after once turning off, wait for approx. 10 seconds. Or, the unit can not be released from Service Mode.)

Fig. 1-1

BEFORE REMOVING THE MAIN C.B.A. OR THE TV/TUNER UNIT FROM THE UNIT AT THE USER'S LOCATION

Note:
The TV/Tuner Unit includes the Main C.B.A.

CAUTION:
1. **Be sure to make a note of the CURRENT LAMP value (value A) in Service Mode (1/3):**



<Service Mode (1/3)>

Fig. 2

LAMP OPERATION TIME is stored in EEPROM on the Main C.B.A. Therefore, before removing the Main C.B.A. or the TV/Tuner Unit at the user's location, make a note of the CURRENT LAMP value (value A) in Service Mode (1/3). Then, after installing the new Main C.B.A. or the TV/Tuner Unit at the user's location, set the CURRENT LAMP value to the original value (value A) in Service Mode.
Otherwise, OSD and LED Lamp replacement indications will be displayed at the wrong time.

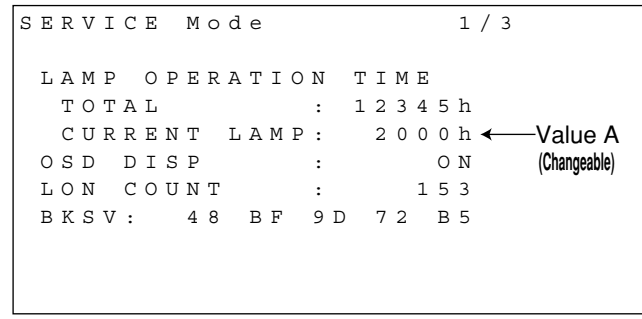
Note:
In case it is impossible to make a note of the CURRENT LAMP value because of a defective Main C.B.A., ask the customer their daily average use and the approximate age of the current Lamp. Then, calculate the CURRENT LAMP value as follows and make a note.

Daily average use (hours)	X	Approx. age (days)	=	**CURRENT LAMP** (hours)

Note:
The TOTAL value can be set to the original value in Service Mode (1/3) by similar method:
Before removing the Main C.B.A. at the user's location, make a note of the TOTAL value in Service Mode (2/3). Then, after installing the new Main C.B.A. at the user's location, set the TOTAL value to the original value in Service Mode.

WHEN REINSTALLING THE MAIN C.B.A. OR THE TV/TUNER UNIT INTO THE UNIT AT THE USER'S LOCATION

CAUTION:
1. Set CURRENT LAMP value to original value as follows.
   1) Select CURRENT LAMP in Service Mode (1/3).
   2) Press the VOLUME UP/DOWN key on the remote to change to the original value (value A) that was noted before removing the Main C.B.A. or the TV/Tuner Unit at the user's location.

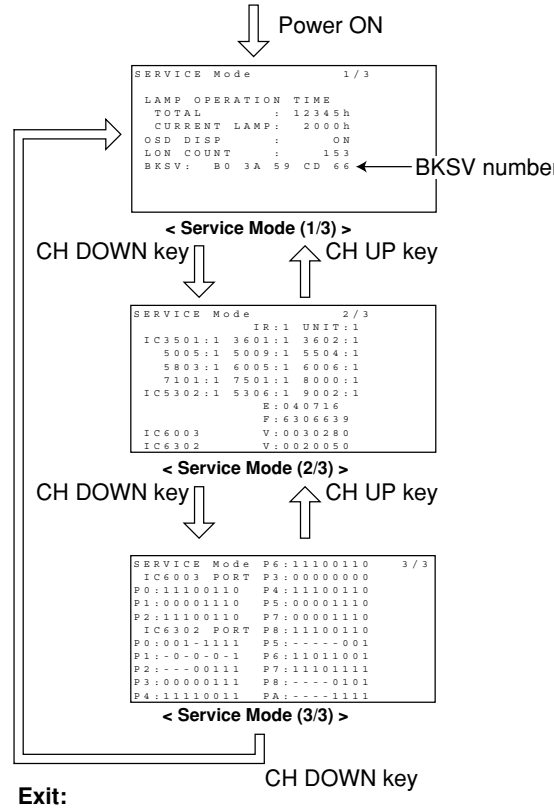


<Service Mode (1/3)>

Fig. 3

Service Mode Map

Enter :
VOLUME DOWN button + TV/VIDEO key
(on the front) (on the remote)
(for more than 5 seconds in power off condition)



Exit:
Power OFF.
(When turning the power on again after once turning off, wait for approx. 10 seconds. Or, the unit can not be released from Service Mode.)

REPLACEMENT OF LAMP

Lamp Time Reset Procedure:

Be sure to reset the Lamp time to "0" after replacing the new Lamp.

1. Plug in the AC Cord, and turn on the power by pressing the POWER button.
2. Press and hold the VOLUME DOWN button on the unit and the PIP key on the remote together for over 5 seconds in power on condition.
   When the reset is finished, the display as shown in Fig. 5-1 appears and the LAMP LED goes out.

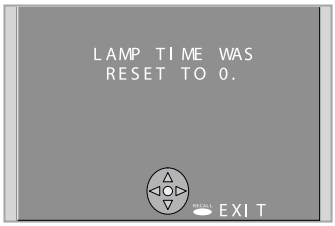


Fig. 5-1

Note:

1. The unit will detect when the Lamp's end of life is approaching and the following message will be displayed. And the LAMP indicator light will be lit when the Lamp's end of life is approaching.

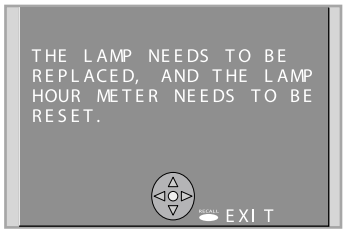


Fig. 5-2

2. Influences of frequent lighting, continuous light use for over 24 hours, the number of times lit, the length of time between lightings, etc. may shorten lamp life. (Because of this, we recommend having a replacement lamp on hand.)

WARNING:

- The lamp could rupture if dropped and lamp fragments could cause injury.
- Because the lamp unit is hot immediately after its use, touching it may cause burns.
  Please allow the lamp to cool before handling or replacing the lamp unit.
- If replacement of the lamp unit becomes necessary during the operation of the Device Display, follow the procedure to turn off the power and wait until the lamp unit cools completely.

Cautions for Lamp Unit Replacement:

- Do not disassemble the Lamp.
- The lamp may be hot. Be careful when handling. Wear gloves.
- Under no circumstance should you touch the actual bulb. At this high operating temperature the natural oil on your finger can cause the glass to weaken where touched and the bulb can crack or explode.

Lamp Replacement Procedure:

1. Press the POWER button on the remote to turn off the power.
2. Wait for about 1 minute until the cooling fan stops.
   Note:
   The lamp cooling fan will continue to operate for about 1 minute after the power is turned off. Do not unplug the AC Cord from the outlet until the fan has stopped. Avoid interrupting the power by using circuit breakers or switchable power strips.
3. After the cooling fan has stopped, unplug the AC Cord from the outlet.
   Note:
   Please wait more than one hour before replacing the lamp.
   [Forced cooling function]
   If you need to replace the lamp more urgently:
   - The Projection display has a forced cooling feature. After the POWER button is turned OFF, and sometime during about the first minute of the normal cooling fan operation, press the VOLUME UP button on the unit and CH UP key on the remote at the same time for more than 5 seconds. The cooling fan will operate for about 10 minutes. (LAMP LED will flash 5 times every 5 second and POWER LED will flash red for 10 minutes.)
4. Remove the Front Cover Unit from the latches.
5. Remove the Lamp Cover by loosening the Screw.

Fig. 5-3

6. Loosen the Screw on the Lamp. Then, pull the Lamp.
   Note:
   Because the Lamp may still be hot, use caution when handling.

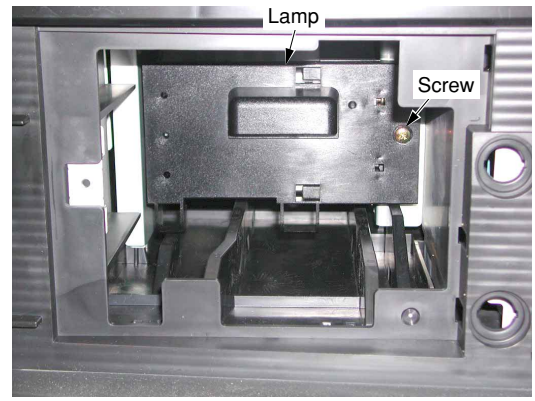


Fig. 5-4

7. Install the new Lamp, and tighten the Screw.
8. Install the Lamp Cover securely, and tighten the Screw.
9. Install the Front Cover Unit.

Note:
After replacing the Lamp, use caution to reset the Lamp time.

CLEANING METHOD

THE SCREEN UNIT AND THE MIRROR

•THE SCREEN UNIT (Lenticular Screen, Fresnel Lens)

It is strongly recommended that the Lenticular Screen surface (outside) and the Fresnel Lens surface (inside) should be wiped gently with a clean, soft, dry cloth to remove the dirt.

Note:

1. If the dirt cannot be removed by wiping with a clean, soft, dry cloth, use a clean, soft, dry cloth moistened with diluted neutral pH liquid cleanser or a lens cleaner (usually containing a small amount of ethyl alcohol) and wipe lightly. Take care not to leave any streaks.
   Do not use cleaning materials containing methyl alcohol, acetone, or dichloromethane.
2. Use an air blower to clean the inner surface of the Lenticular Screen and the outer surface of the Fresnel Lens (the surfaces that one another). These surfaces must not be wiped with a cloth.

•THE MIRROR

Remove any dirt with an air blower or wipe with a clean, soft, dry cloth. If wiped too forcefully, the surface of the Mirror can be damaged. If wiping with a clean, dry cloth does not remove the dirt, the Mirror must be replaced.

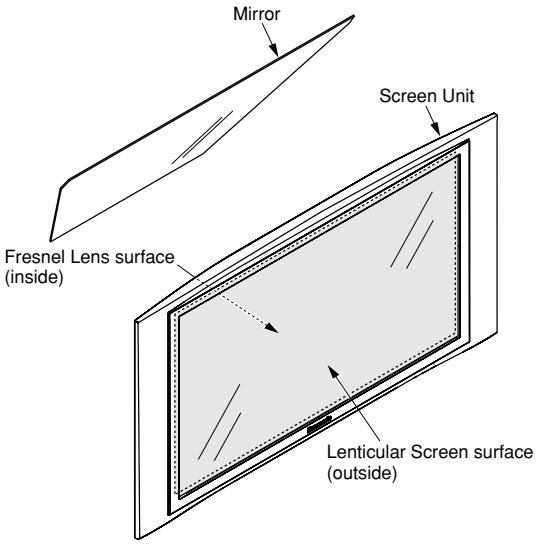


Fig. 6-1

THE LAMP

Gently wipe the surface of the glass of the Lamp with cleaning paper or soft cloth.

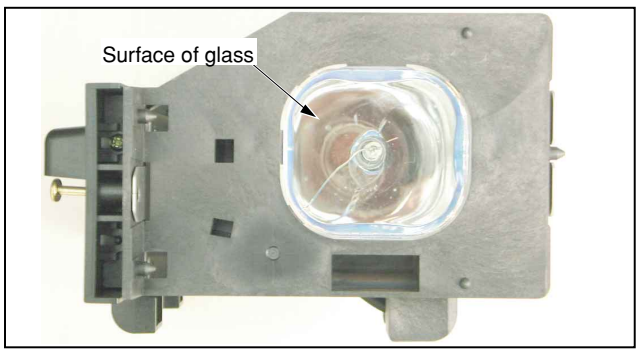


Fig. 6-2

THE FILTER ON THE PROJECTION UNIT

CAUTION:

Operating with torn or damaged Air Filter may cause damage to the Projection unit.

Remove the Projection Unit from rear. Then, clean the filters on the Projection Unit. Gently remove any accumulated dust from filter with a vacuum cleaner.

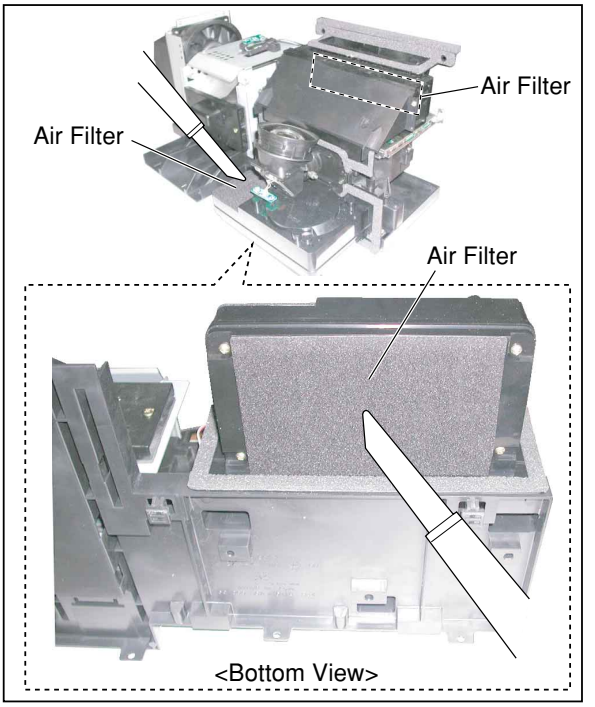


Fig. 6-3

THE PROJECTION LENS

Use lens cleaning paper and cleaner available at your local camera shop, etc. Dampen the cleaning paper with cleaner and gently wipe the surface of the lens from the center outward to remove dust.

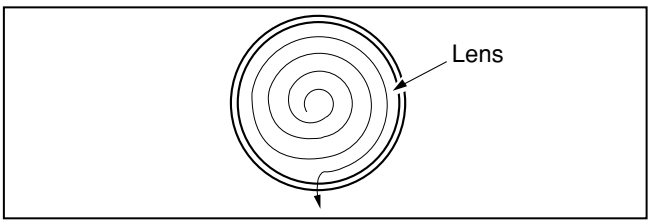


Fig. 6-4

THE POLARIZER UNIT, THE FIELD LENS, THE RELAY LENS, THE CONDENSER LENS, THE DICHROIC MIRROR, THE FULL MIRRORS, THE INTEGRATOR AND THE P/S CONVERTER

Make sure that no dust gets on the optical components such as the Polarizer Unit, the Field Lens, the Relay Lens, the Condenser Lens, the Dichroic Mirror, the Full Mirrors, the Integrator and the P/S Converter. Clean these optical components with cleaning paper moistened with pure ethyl alcohol or a lens cleaner which contains no water or oil.

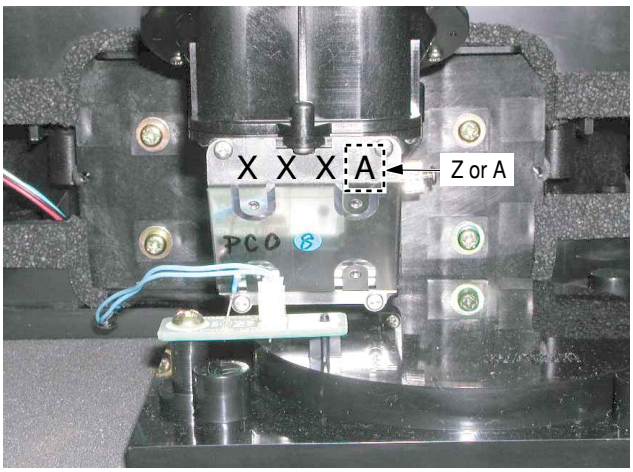
THE LCD PANEL OF THE LCD/PRISM UNIT

1) Clean the surface of the LCD Panel of the LCD/Prism Unit with an air blower or wipe with a clean, or soft blush lightly.
2) If any dirt remains, lightly wipe the surface with a cotton swab moistened with pure ethyl alcohol or a lens cleaner which contains no water or oil. Use a new swab after each wiping so that dirt will not be re-deposited on the surface.

TO DISTINGUISH THE PROJECTION LENS UNIT OR THE PROJECTION UNIT

The only difference between the 43 inch model and the 50 inch model of the Projection Unit is the Projection Lens. To distinguish, see marking (Z or A) on the Projection Lens.
And the 60 inch model of the Projection Unit is placed label on the Projection Lens.

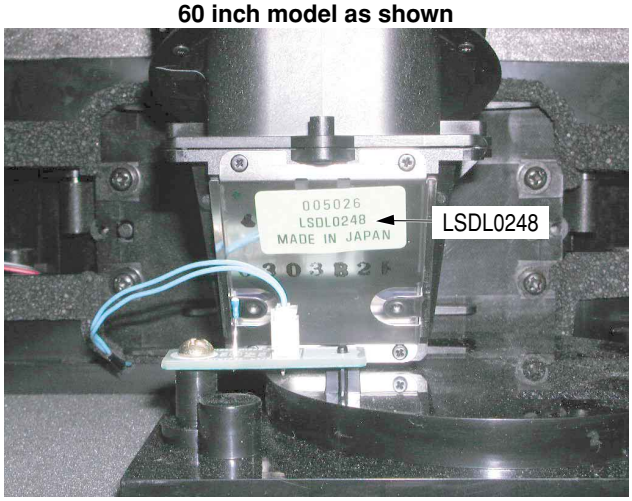
43/50 inch model as shown



<Front View>

Z with red: for 43 inch model
A with black: for 50 inch model

60 inch model as shown

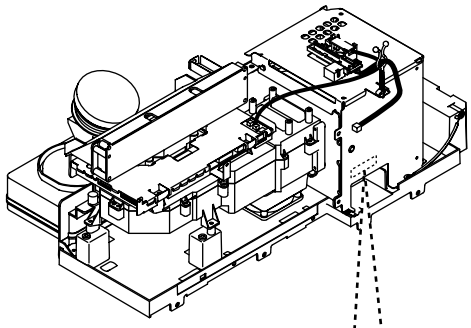


<Front View>

LSDL0248 with Yellowish green label: for 60 inch model

Note:
LSDL0248 is not the part numbers of the Projection Lens as a replacement part.

And also, see the stamp on the Lamp Wall of the Projection Unit. (The stamp has been added on a running change basis.)



Stamp

43"LSXA0571	: for 43 inch model
50"LSXA0572	: for 50 inch model
60"LSXA0573	: for 60 inch model

RESET USER'S MEMORY FUNCTIONS

Be sure to reset the user's memory:
- After replacing the DTV Tuner Unit (included in the TV/ Tuner Unit)
- If the secret code of V-chip is forgotten.
- When moving the unit to a new location.

1. Turn on the power.
2. Press and hold the VOLUME DOWN button on the unit and the OK key on the remote for more than 5 seconds. When reset is finished, power shuts off automatically (the user's memory is reset).

CLOGGED AIR FILTER DETECTION

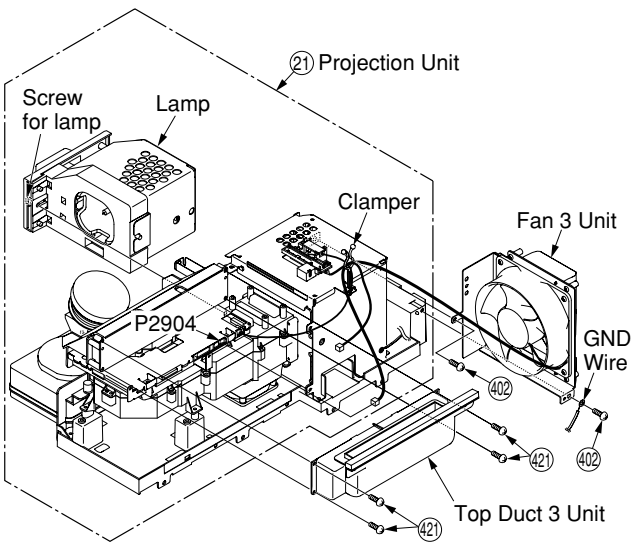
When a dirty or clogged air filter is detected, the OSD display appears for 1 minute. And then the Lamp is turned OFF.
When this OSD display appears, remove the Projection Unit from rear, and clean the air filters gently on the Projection Unit.

AIR FILTER CLEANING IS RECOMMANDED AT THIS TIME. FIRST TURN THE UNIT OFF.
PLEASE CALL FOR SERVICE.

UNIT WILL BE TURNED OFF AFTER 1 MINUTE.

BEFORE REMOVING THE PROJECTION UNIT FROM THE UNIT AT THE USER'S LOCATION

1. When removing the Projection Unit, remove the Lamp from the Projection Unit and keep it. Then, reinstall this Lamp into the new Projection Unit.
2. When removing the Projection Unit, remove the Fan 3 Unit, the Top Duct 3 Unit and the 20-pin Cable from the Projection Unit and keep them. Then, reinstall the Fan 3 Unit, the Top Duct 3 Unit and the 20-pin Cable into the new Projection Unit.



DO NOT UNPLUG AC CORD DURING COOLING OPERATION

The lamp cooling fan will continue to operate for approximately 1 minute after the power is turned off.
At the same time, the POWER LED will flash red.
Do not disconnect the AC Cord from the power outlet and do not open any circuit breakers while the cooling fan is still operating.

HOT CIRCUIT

Primary circuit exists on the Audio Amp C.B.A., the Ballast C.B.A. and the Power C.B.A.
This circuit is identified as "**HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PT-43LCX64	A
PT-50LCX64	B
PT-60LCX64	C
NOT USED	PT

Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "PT."

WIRE AND LEAD POSITION DIAGRAM OF THE UNIT

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note: Use extreme care especially for the following.

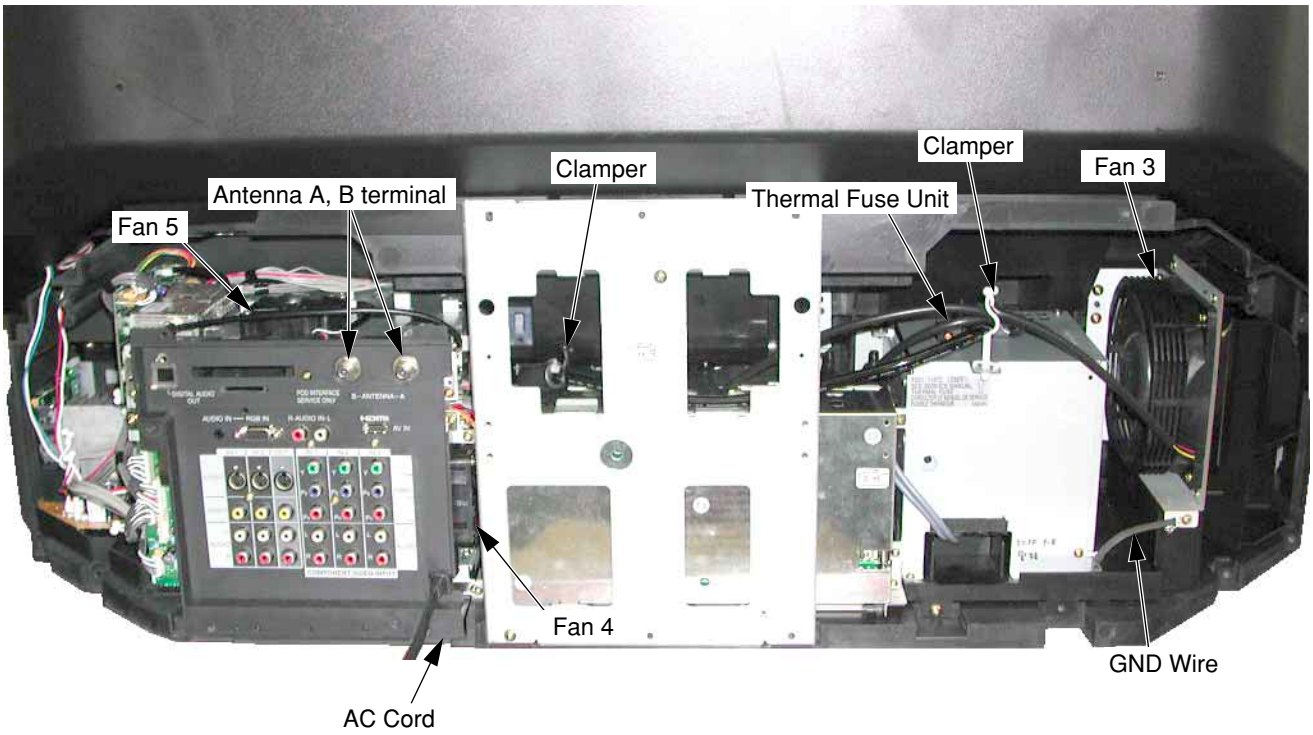
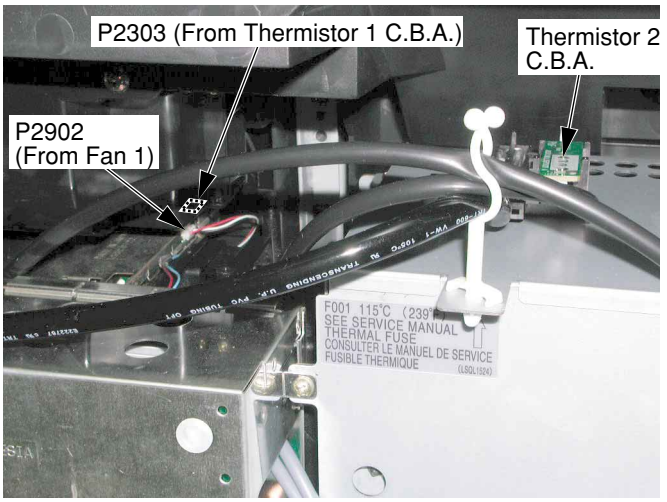
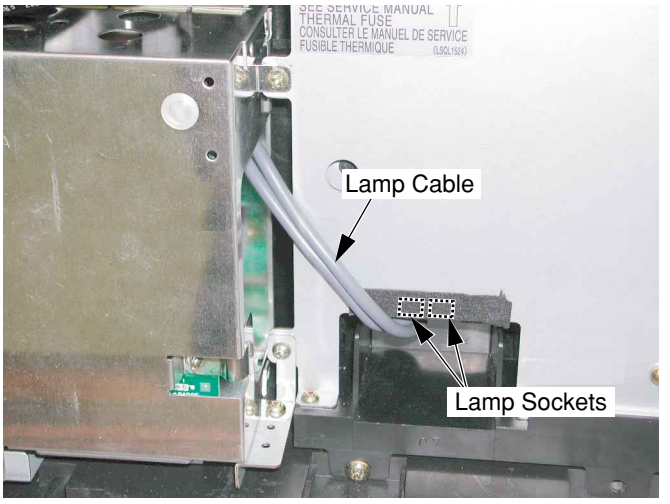


Fig. 9-1

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note: Use extreme care especially for the following.





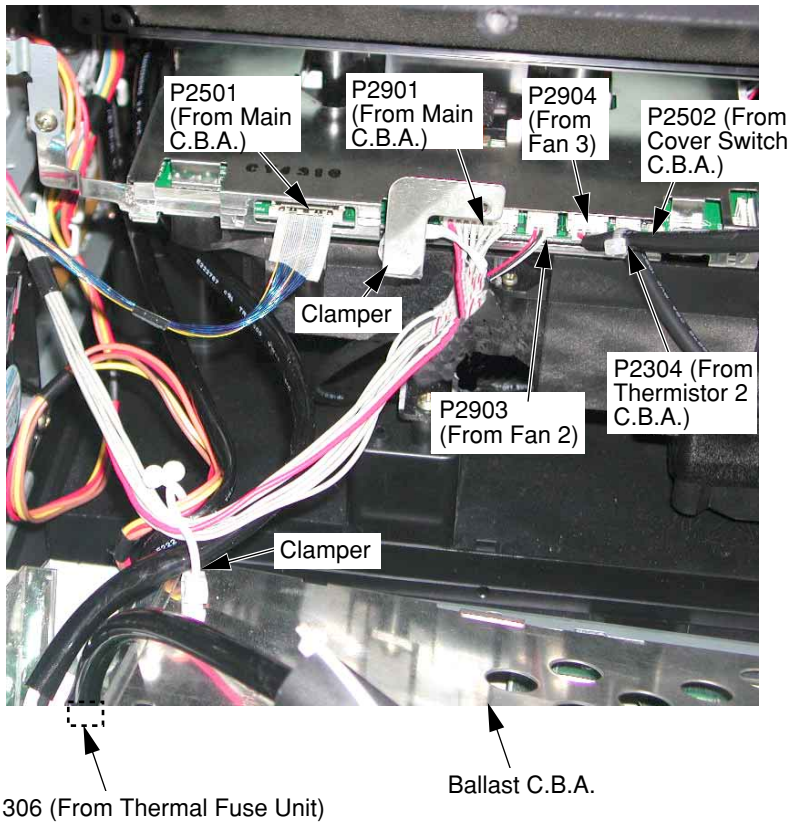


Fig. 9-2

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note: Use extreme care especially for the following.

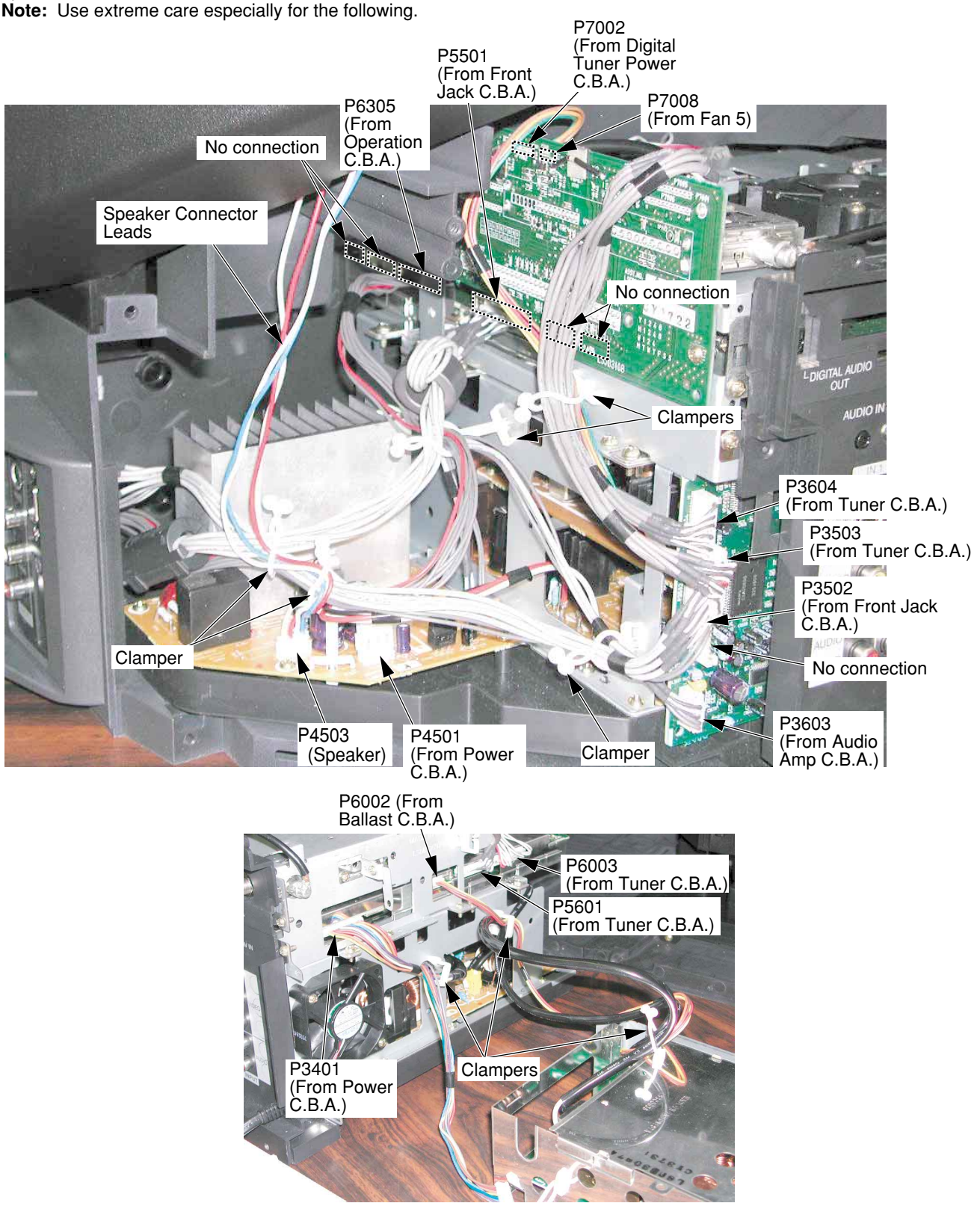


Fig. 9-3

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note: Use extreme care especially for the following.

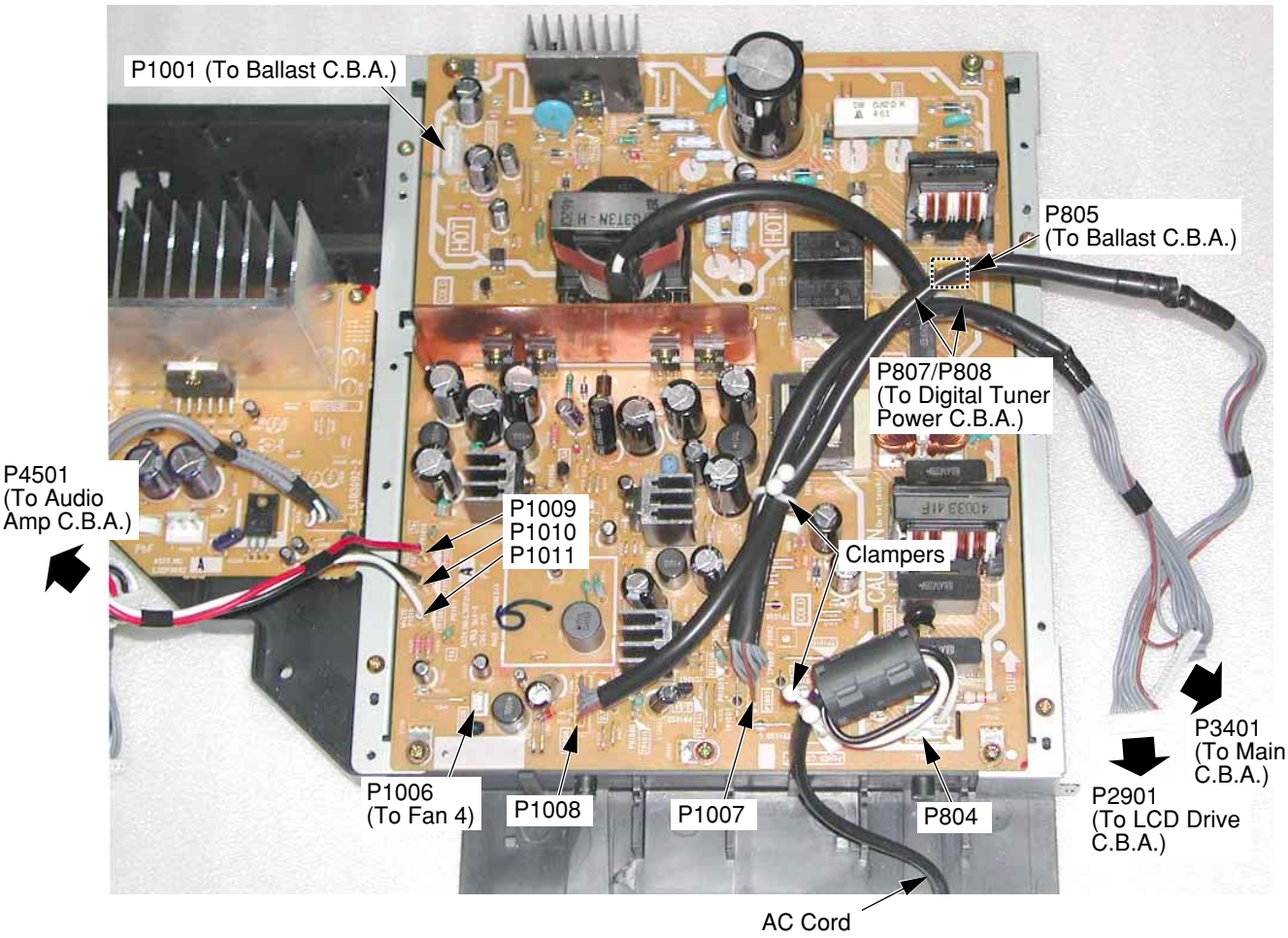


Fig. 9-4

CABINET SECTION

DISASSEMBLY METHOD OF CABINET SECTION

Cabinet section contains following removal procedures:

REMOVAL OF THE BALLAST C.B.A. AND THE TV/TUNER UNIT FROM THE CABINET

REMOVAL OF THE PROJECTION UNIT FROM THE CABINET

REMOVAL OF THE TUNER C.B.A., THE DTV TUNER UNIT, THE MAIN C.B.A., THE DIGITAL TUNER POWER C.B.A., THE REAR JACK C.B.A., THE AUDIO AMP C.B.A., THE POWER C.B.A. FROM THE TV/TUNER UNIT

REMOVAL OF THE SCREEN UNIT AND THE SPEAKER FROM THE DISPLAY

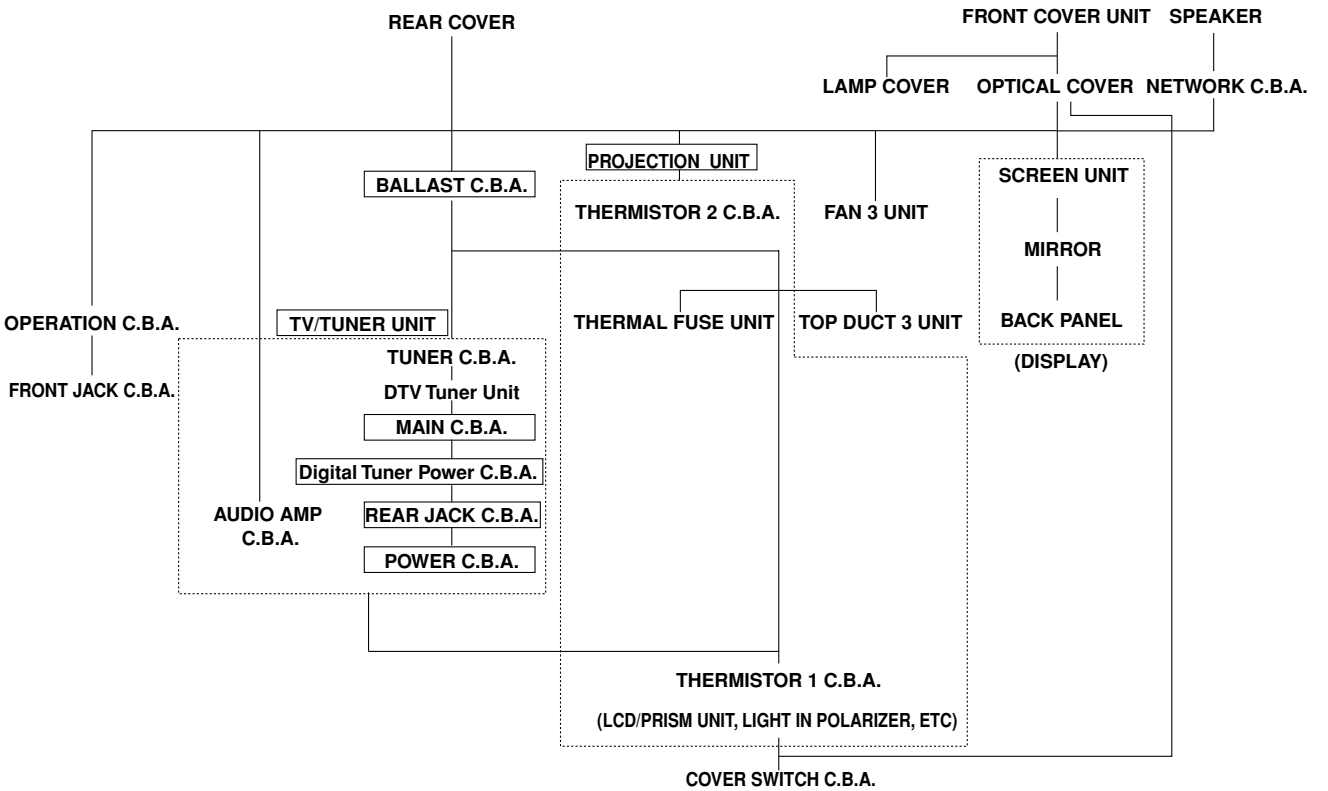
REMOVAL OF THE MIRROR FROM THE BACK COVER

REMOVAL OF THE FRONT JACK C.B.A. AND THE OPERATION C.B.A. FROM THE CABINET

REMOVAL OF THE COVER SWITCH C.B.A. FROM THE CABINET

DISASSEMBLY FLOWCHART

This flow chart indicates the disassembly steps of the cabinet parts and the P.C.Boards in order to gain access to item (s) to be serviced. When reassembling, perform the step (s) in the reverse order. Bend, route and dress the wires as they were originally.



Note :

a. Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.
b. When reinstalling, ensure that the connectors are connected firmly and electrical components have not been damaged.
c. Do not supply power to the unit during disassembly and reassembly.

REMOVAL OF THE BALLAST C.B.A. AND THE TV/TUNER UNIT FROM THE CABINET

1. **(PT-43LCX64/PT-50LCX64)**
   Remove the Rear Cover by removing the 18 Screws (401).

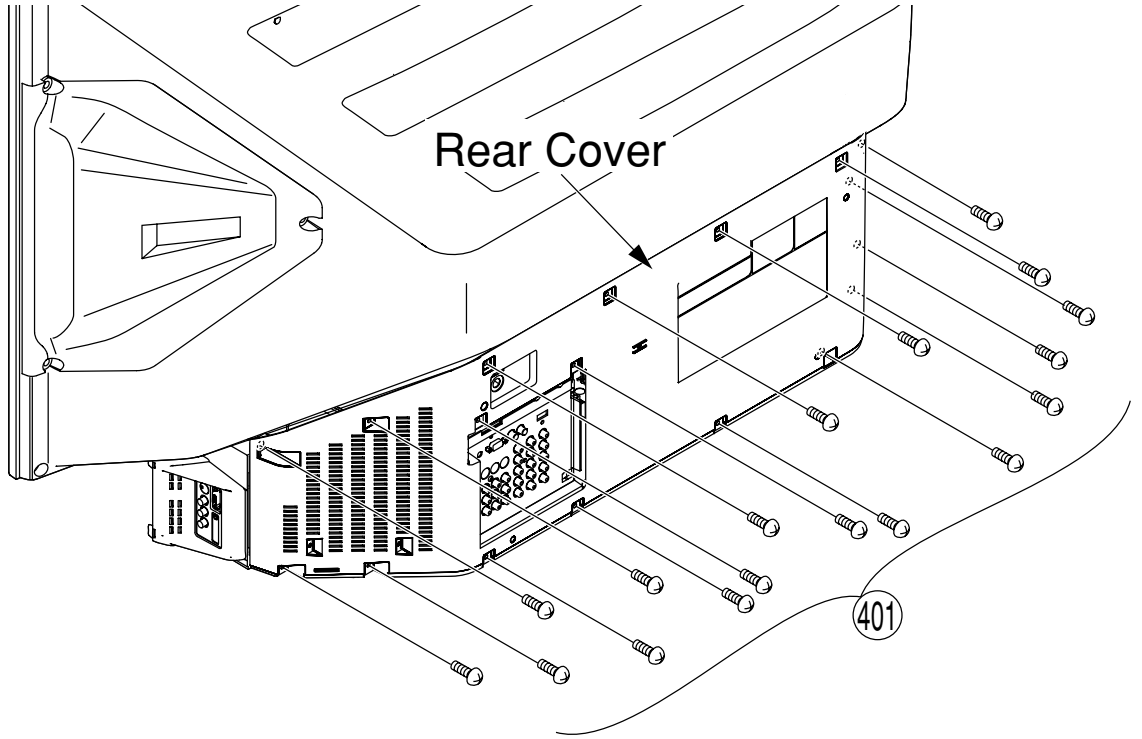


Fig. D1-1-1

1. **(PT-60LCX64)**
   Remove the Rear Cover by removing the 20 Screws (401, 464).

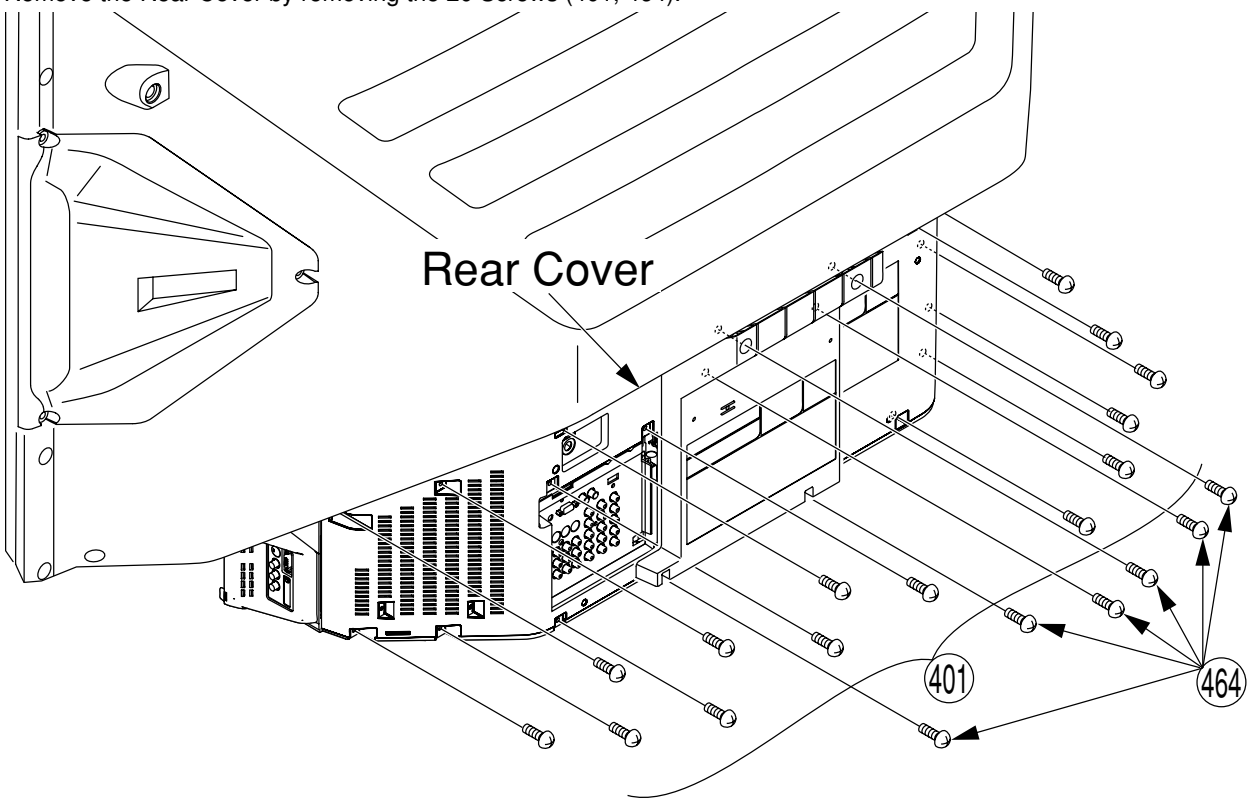


Fig. D1-1-2

2. Remove the Rear Support Plate by removing the 4 Screws (401, 452).

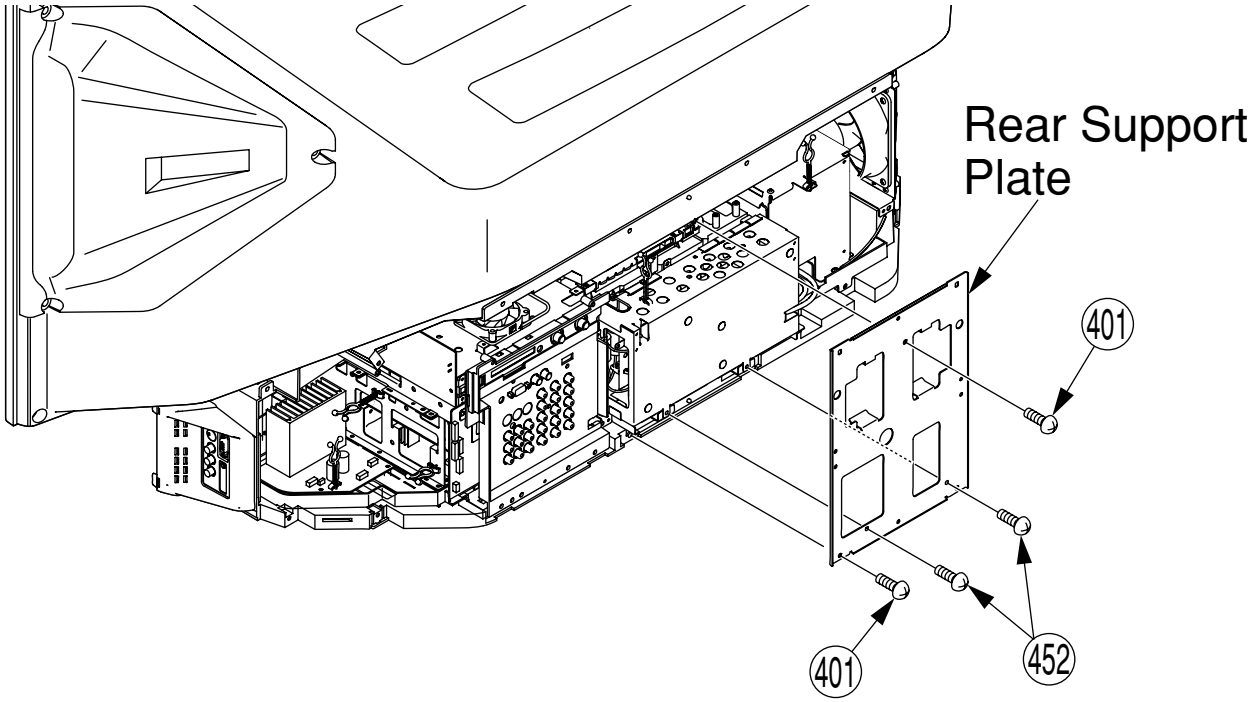


Fig. D1-2

3. 1) Remove the 5 Screws (402) and remove Clamper-1.
   2) Remove the 2 Screws (451) on the Lamp Socket.
   3) Disconnect the Lamp Connector.
   4) Avoiding the Ballast C.B.A., disconnect Connector P1306 (Thermal Fuse Unit) inside of the Ballast C.B.A.
   5) Remove the Clamper from the Ballast C.B.A.

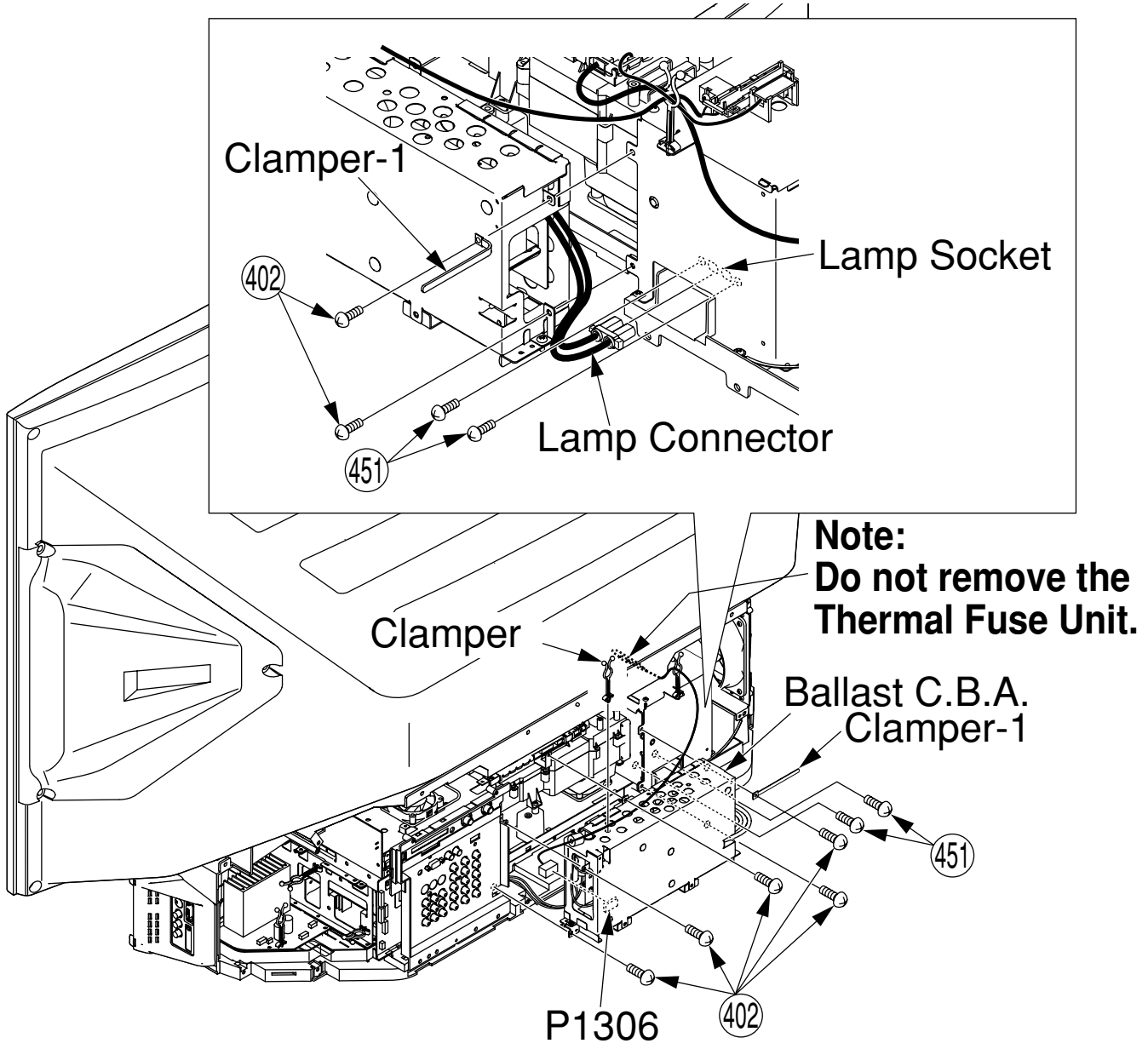


Fig. D1-3

Replacement Note of Ballast C.B.A.:
These parts will be necessary when replacing the Ballast C.B.A. Set aside, and keep and re-use.
- The Clamper on Ballast C.B.A.
- The Thermal Fuse Unit

4. 1) Disconnect Connector P2901and release them from the clamper.
   2) Disconnect Connector P2501 (20-pin Cable) and release it from the clamper.
   CAUTION: Take extreme care not to damage the 20-pin Cable when disconnecting.
5. 1) Disconnect Connectors P3502, P5501, P4503, P6305 and release them from the clampers.
   2) Remove the Screw (452) on the GND Plate A.
   3) Remove the Screw (401) on the TV/Tuner Ass'y.
   4) Lift up and slide the TV/Tuner Ass'y by releasing the 7 Guide Tabs.
   CAUTION: Do not slide the TV/Tuner Unit before removing the 20-pin Cable.

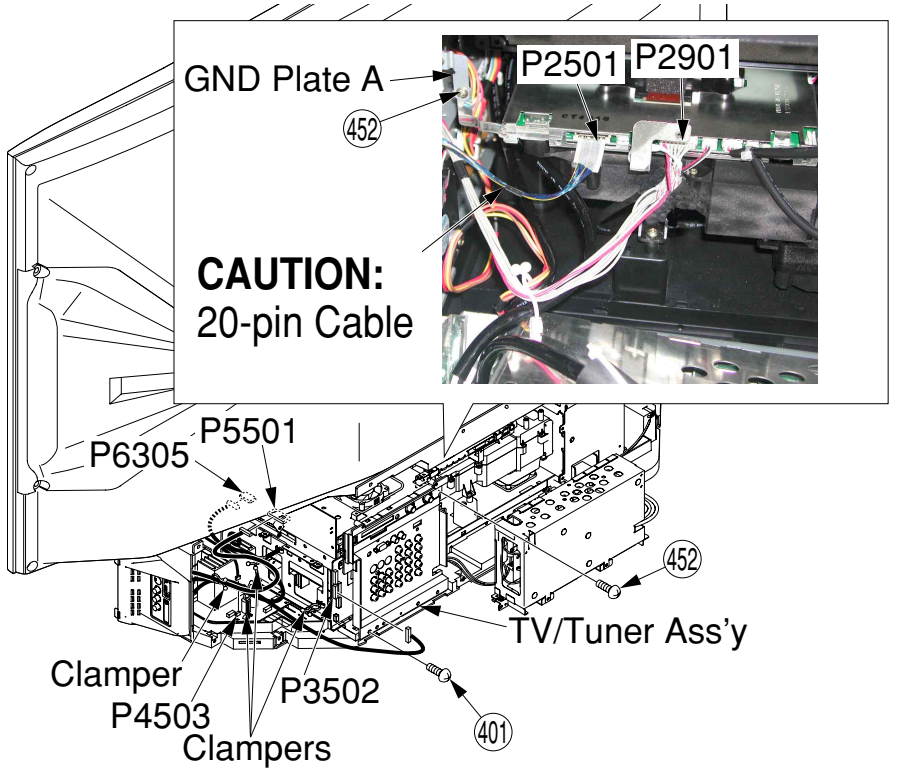


Fig. D1-4

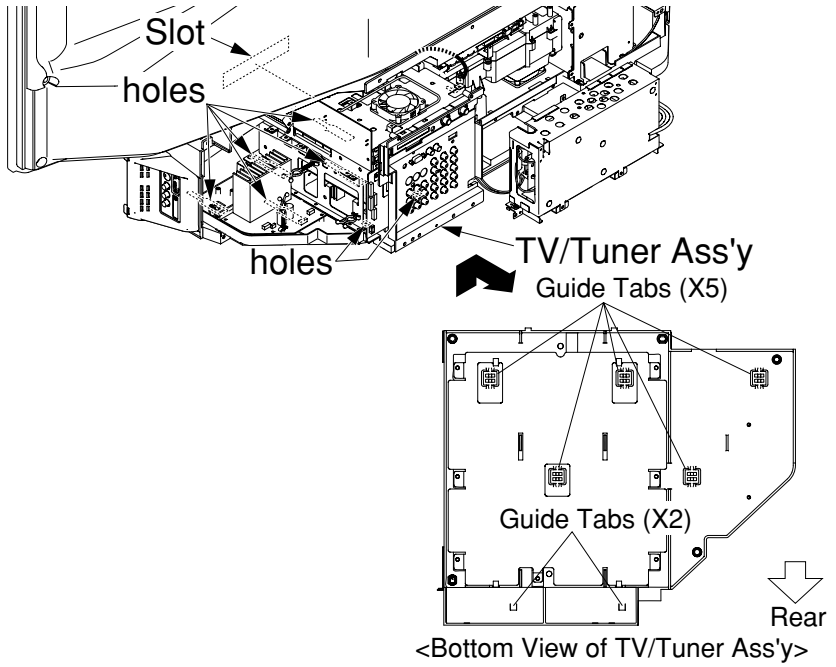


Fig. D1-5

Replacement Note of TV/Tuner Unit:
These parts will be necessary when replacing the TV/Tuner Unit. Set aside, and keep and re-use.
- 20-pin Cable

6. 1) Pull off the TV/Tuner Ass'y with the Ballast C.B.A. while taking care with the cables.
   2) Remove the GND Plate A from the TV/Tuner Unit by removing the Screw (452).
   3) Remove the SD Door Unit from the TV/Tuner Unit by releasing the 2 Locking Tabs.

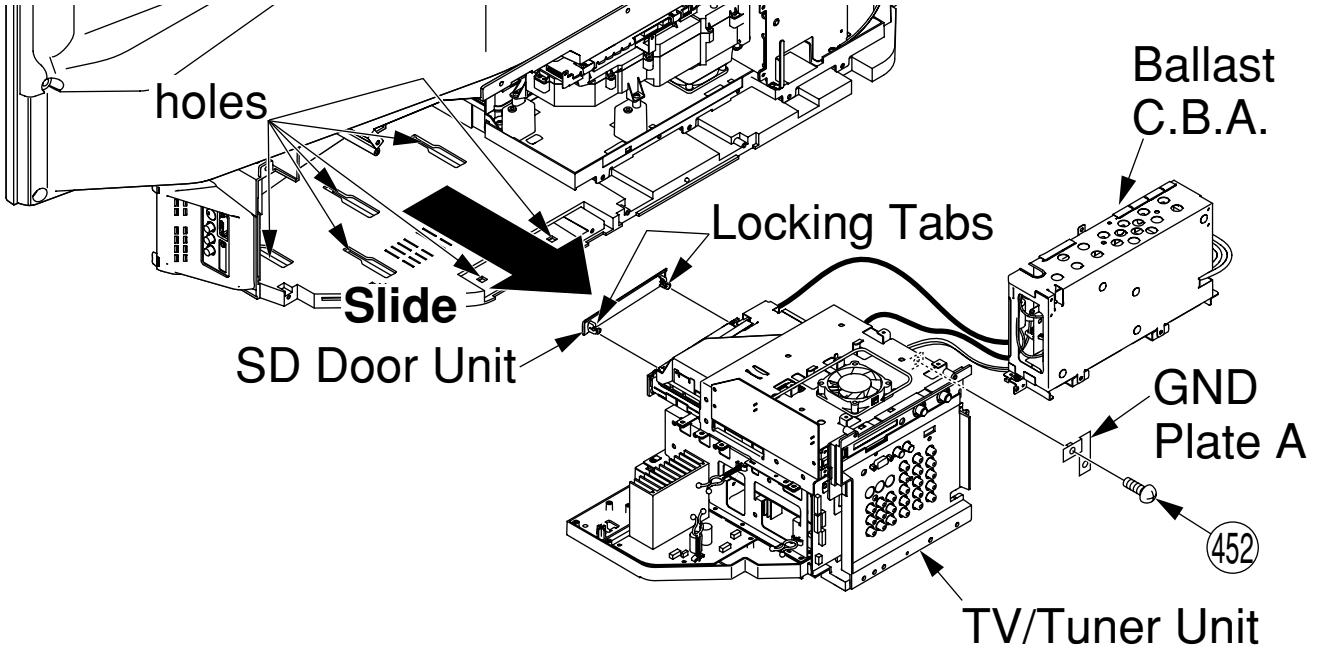


Fig. D1-7-1

Reassembly Note: When installing the SD Door Unit, install the SD Door Unit with the 2 Locking Tabs from the front of the cabinet after installing the TV/Tuner Unit into the cabinet.

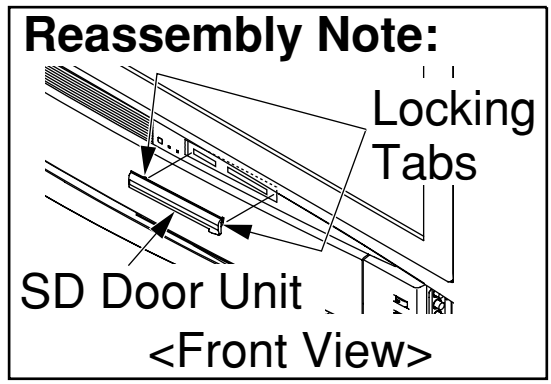


Fig. D1-7-2

Replacement Note of TV/Tuner Unit:
These parts will be necessary when replacing the TV/Tuner Unit. Set aside, and keep and re-use.
- The GND Plate A
- The SD Door Unit

7. 1) Disconnect Connectors P6002, P805, P1001 and release them from the clampers.
   2) Then, remove the Ballast C.B.A.

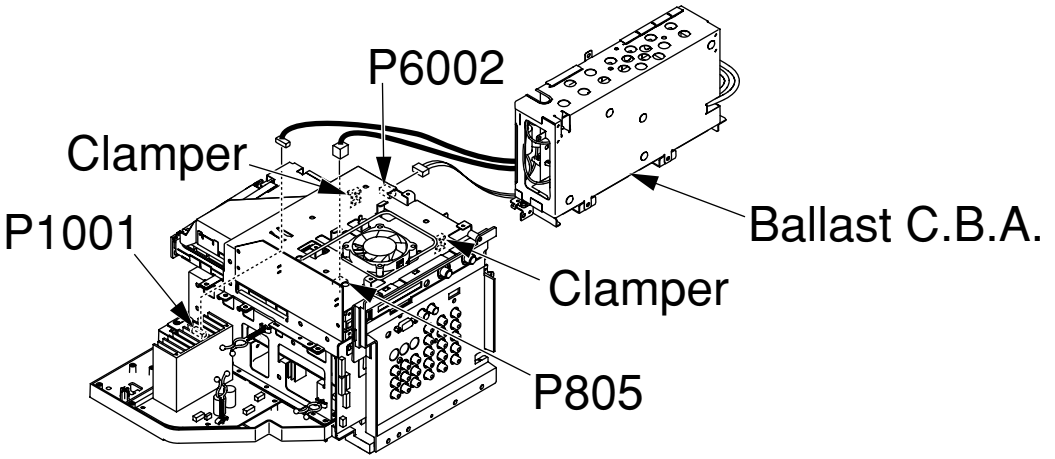


Fig. D1-8

REMOVAL OF THE PROJECTION UNIT FROM THE CABINET

1. Remove the Ballast C.B.A. and the TV/Tuner Unit. Refer to Steps 1~6 in "REMOVAL OF THE BALLAST C.B.A. AND THE TV/TUNER UNIT FROM THE CABINET."
2. 1) Disconnect Connector P2502. Then, hook the P2502 cable to the pin.
   2) Remove the 7 Screws (401) on the Projection Unit.
   3) Lift up and slide the Projection Unit by releasing the 5 Guide Tabs.
   Tips on removal of the Projection Unit:
   First, slide the Projection Unit to the rear (approx. 1.5 inch (4 cm)). Then, lift up the front and the rear portions of the Projection Unit by both hand to release the Guide Tabs. Then, slide out the Projection Unit.
   Or, remove the Fan 3 Unit from the Projection Unit at first. Refer to Fig. D2-3.

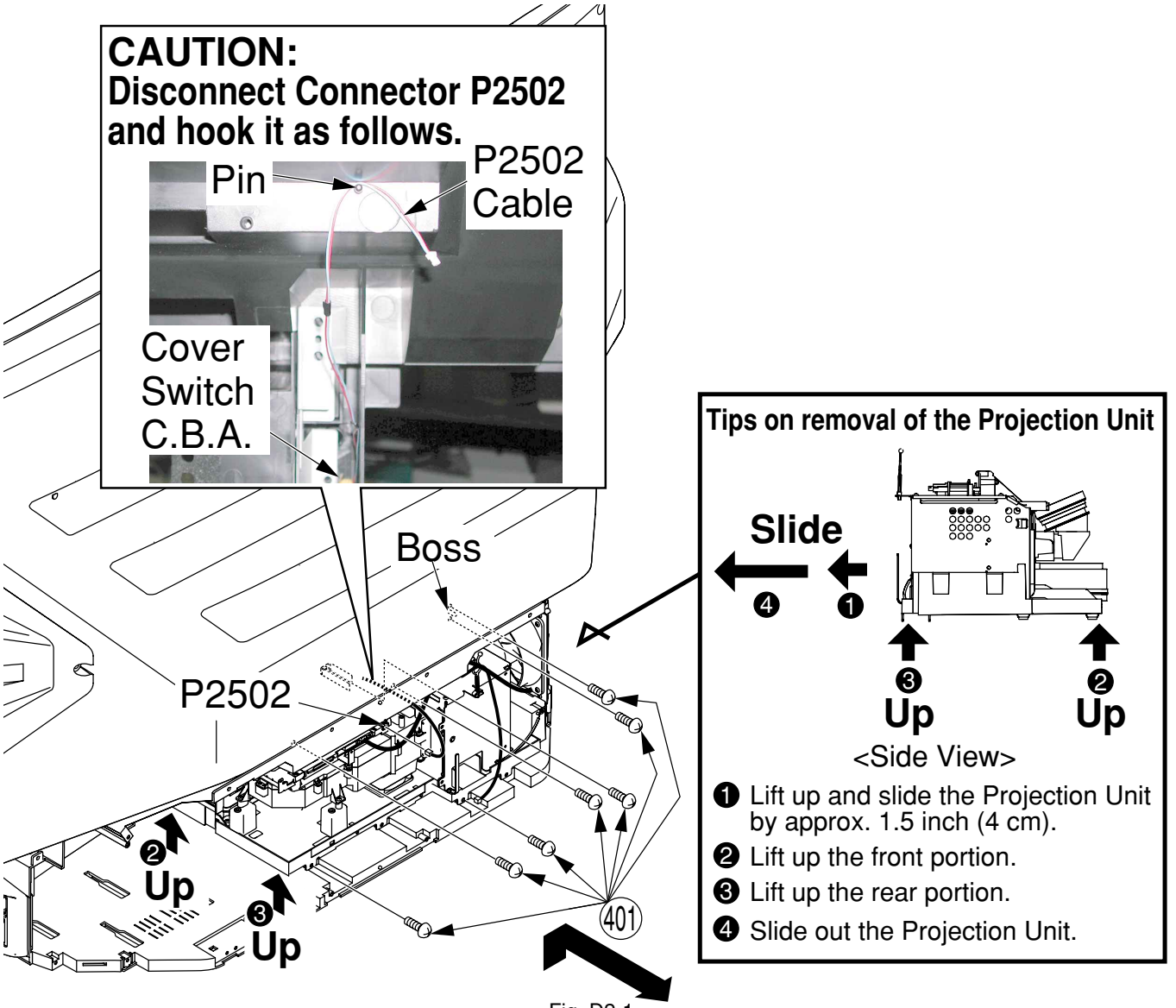


Fig. D2-1

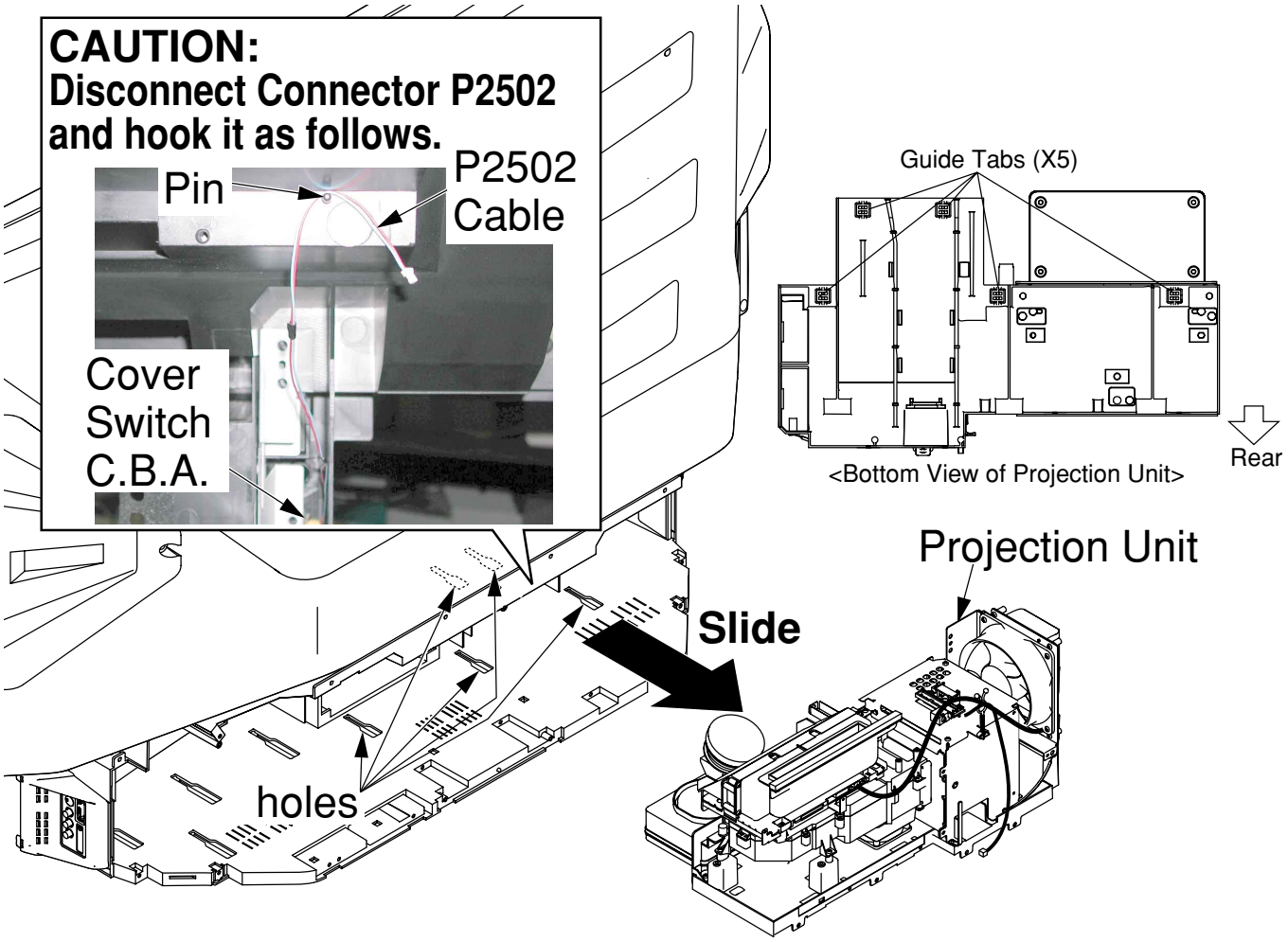


Fig. D2-2

Reassembly Note:
Before installing the Projection Unit, confirm that the P2502 cable is hooked to the pin. Then, install the Projection Unit to the cabinet.

3. 1) Disconnect Connector P2904, and remove the Fan 3 Unit by removing the 2 Screw (402).
   2) Remove the Top Duct 3 Unit by removing the 4 Screws (421).
   CAUTION:
   When removing the Screws (421) on the Top Duct 3 Unit, plastic dust may be produced. Therefore, confirm that there is no dust on the Top Duct 3 Unit. If there is dust, clean the Top Duct 3 Unit with a brush, etc. Otherwise, dust may adhere to the inside of the screen.
   3) Remove the Lamp from the Projection Unit by loosening the Screw.

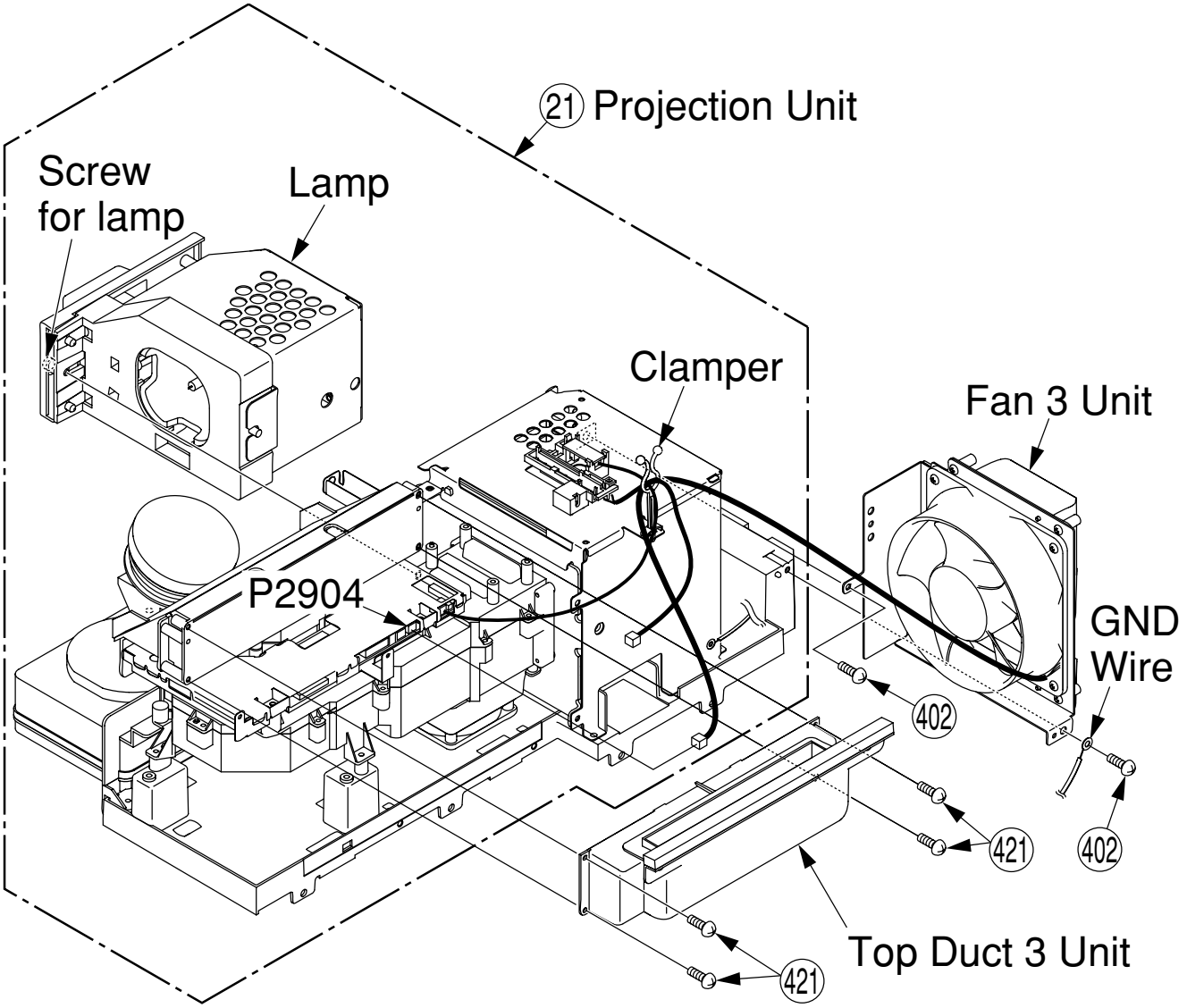


Fig. D2-3

Replacement Note of Projection Unit (Ref. No. 21):
These parts will be necessary when replacing the Projection Unit (Ref.No. 21). Set aside, and keep and re-use.
- Fan 3 Unit
- Top Duct 3 Unit

REMOVAL OF THE TUNER C.B.A., THE DTV TUNER UNIT, THE MAIN C.B.A., THE DIGITAL TUNER POWER C.B.A., THE REAR JACK C.B.A., THE AUDIO AMP C.B.A., THE POWER C.B.A. FROM THE TV/TUNER UNIT

CAUTION:

1. **Be sure to make a note of the CURRENT LAMP value (value A) in Service Mode (1/3):**
   LAMP OPERATION TIME is stored in EEPROM on the Main C.B.A. Therefore, before removing the Main C.B.A. or the TV/Tuner Unit at the user's location, make a note of the CURRENT LAMP value (value A) in Service Mode (1/3).
   Then, after installing the new Main C.B.A. or the TV/Tuner Unit at the user's location, set the CURRENT LAMP value to the original value (value A) in Service Mode.
   Otherwise, OSD and LED Lamp replacement indications will be displayed at the wrong time.

Note:
In case it is impossible to make a note of the CURRENT LAMP value because of a defective Main C.B.A., ask the customer their daily average use and the approximate age of the current Lamp. Then, calculate the CURRENT LAMP value as follows and make a note.

Daily average use (hours)	X	Approx. age (days)	=	**CURRENT LAMP** (hours)

1. Remove the TV/Tuner Unit and the Ballast C.B.A. Refer to Steps 1~7 in "REMOVAL OF THE BALLAST C.B.A. AND THE TV/TUNER UNIT FROM THE CABINET."
2. 1) Disconnect Connectors P6003, P5601, P7002, P7008, P3604, P3503, Tuner terminal and release from the clampers.
   2) Remove the Tuner C.B.A. by removing the 3 Screws (402).
   3) Remove the Fan5 by removing the 2 Screws (435).

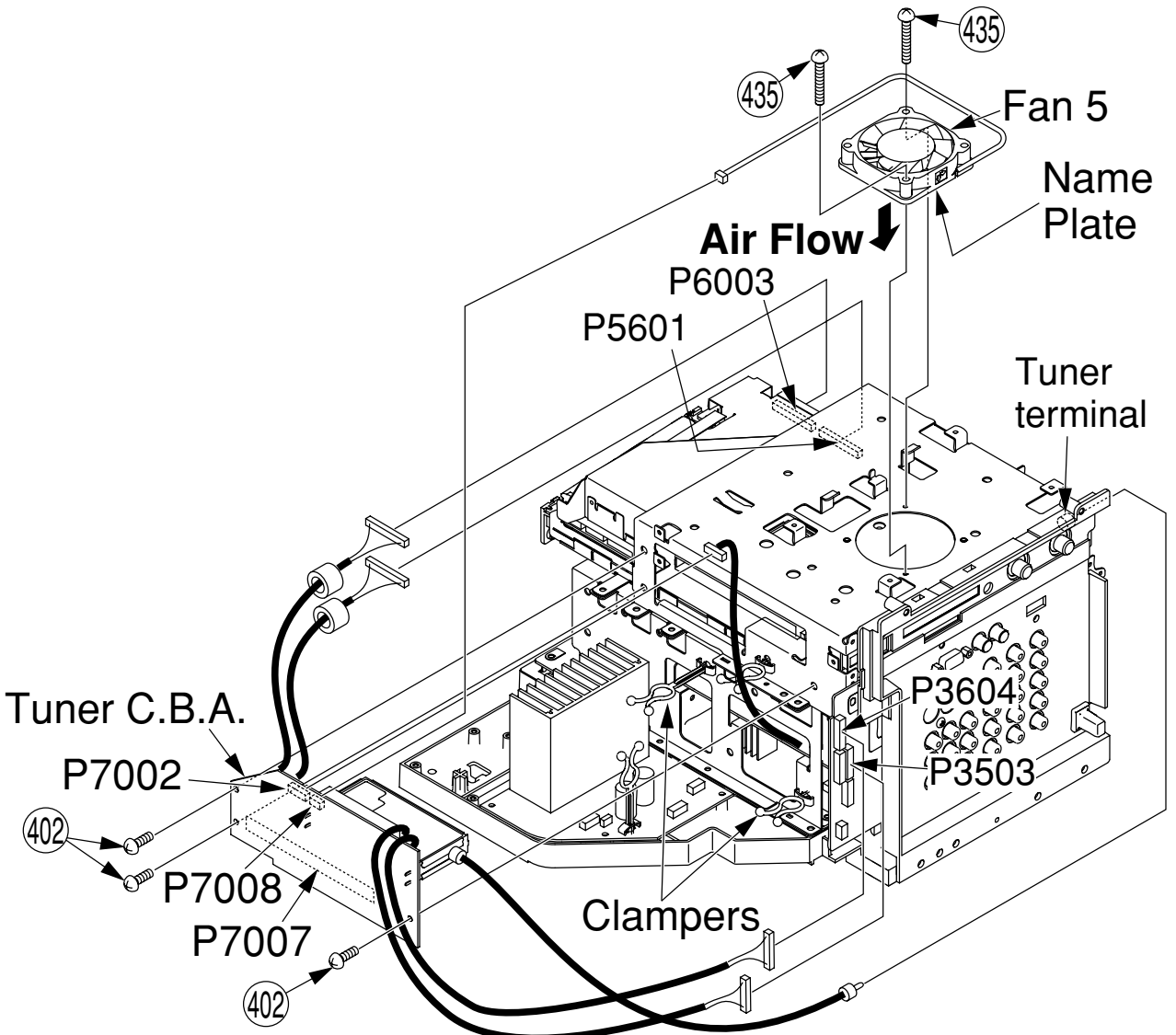


Fig. D3-1-1

4) Release the AC Cord from the slot of the Rear Jack Holder.
5) Remove the Rear Jack Holder by removing the 4 Screws (402).
6) Pull off the DTV Tuner Unit by removing the 2 Screws (402).

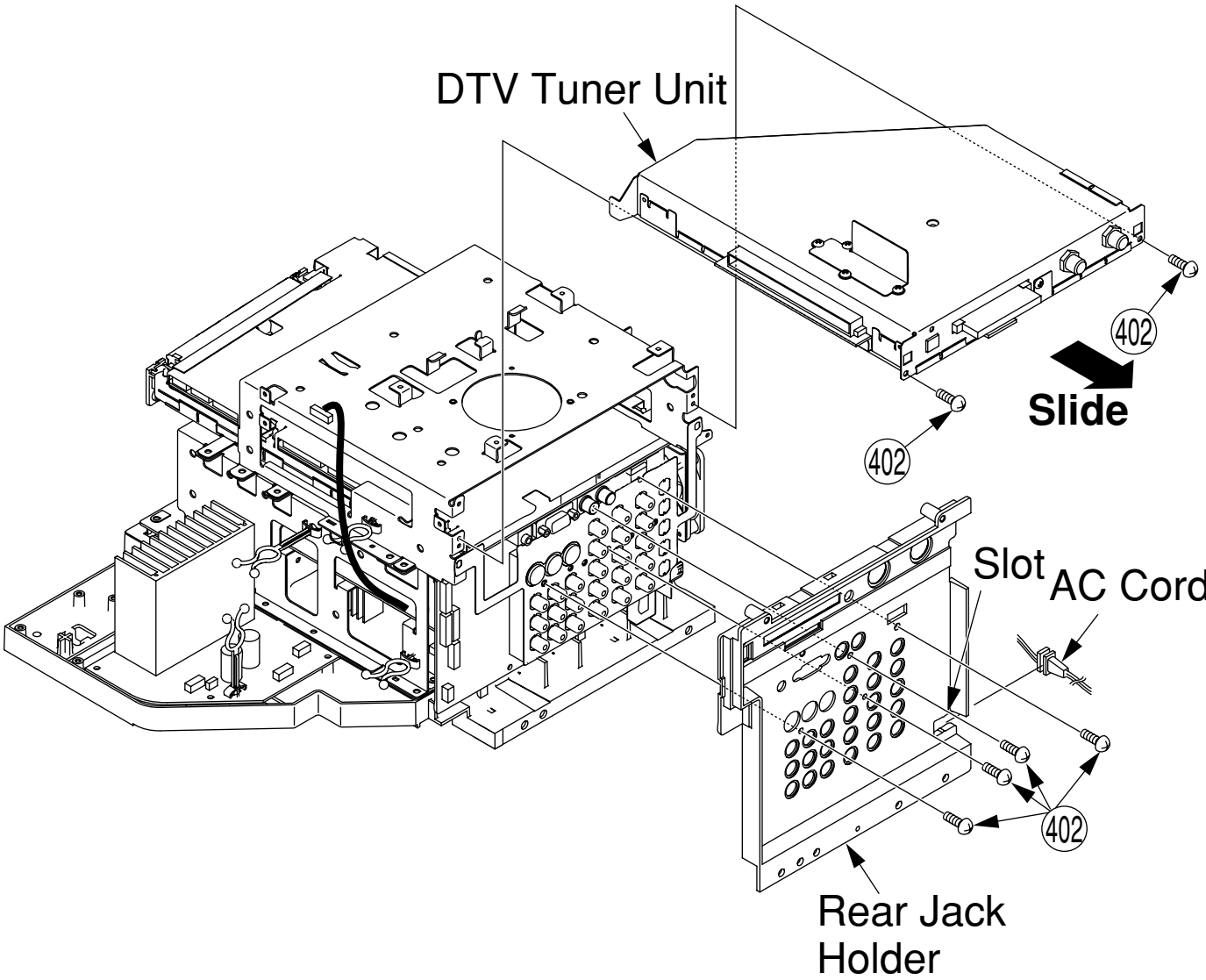


Fig. D3-1-2

3. 1) Disconnect Connector P3401 and release from the clamper.
   2) Remove the Tuner P.C.B. Frame by removing the 6 Screws (402).

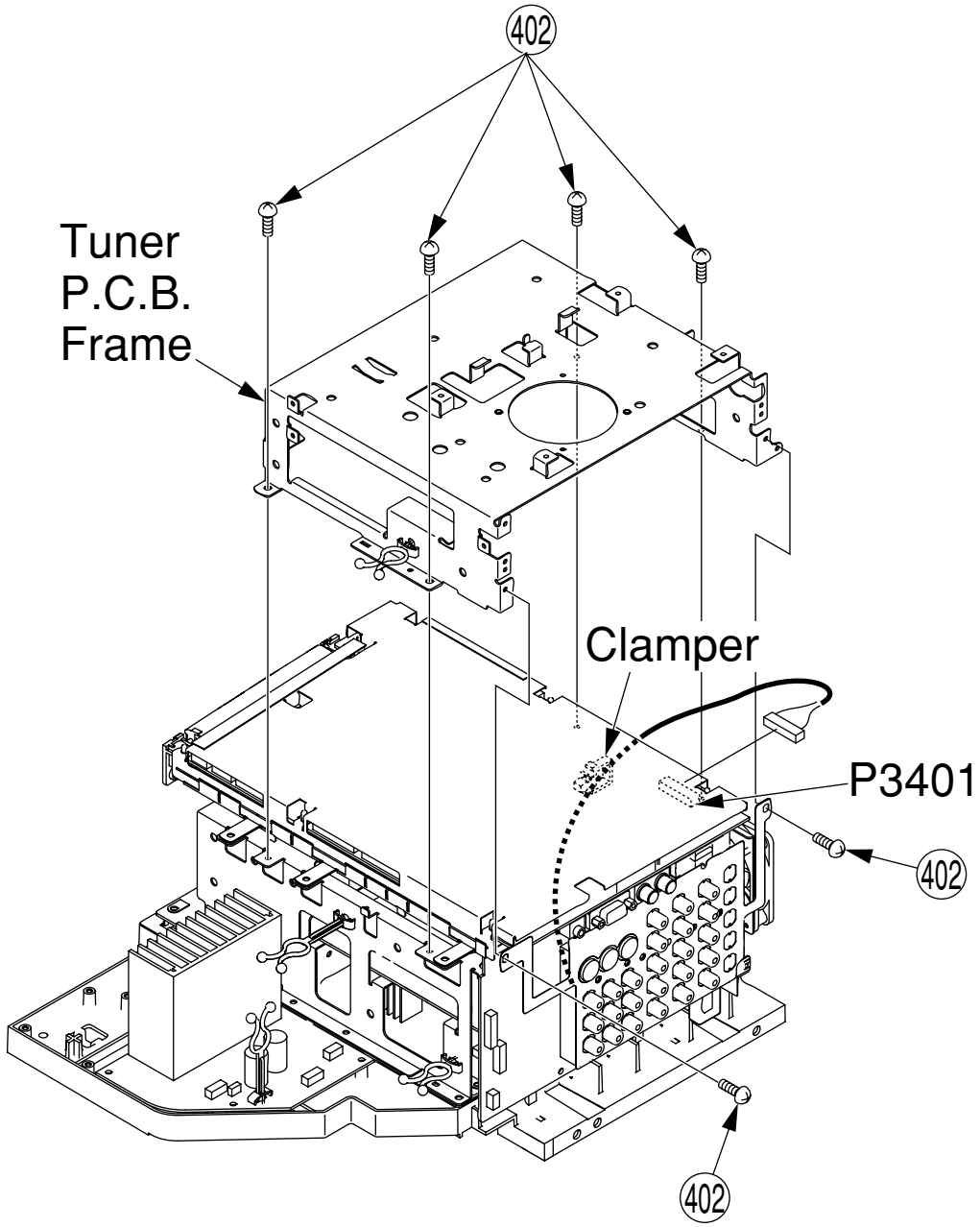


Fig. D3-2

4. Remove the Main C.B.A. by removing the 6 Screws (402) and disconnecting Connector P3403 and P3404.
   Note:
   Be careful not to bend the plates of the Main C.B.A.

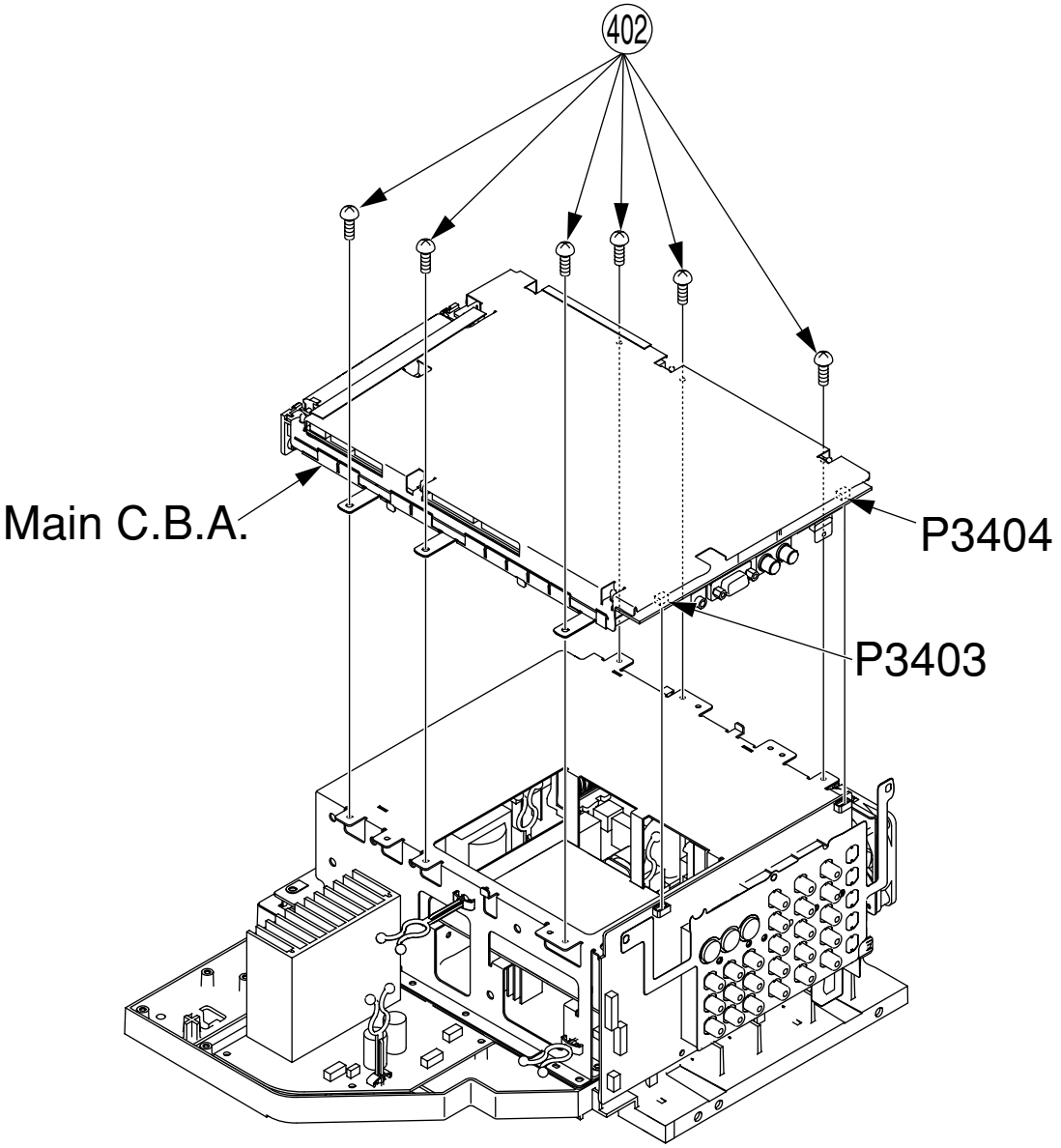


Fig. D3-3

5. 1) Disconnect Connector P1201, and remove the Digital Tuner Power C.B.A. by removing the 4 Screws (402).
   2) Disconnect Connector P3603 and release from the clamper.
   3) Remove the Rear Jack C.B.A. and the GND Plate C from the slots by removing the 2 Screws (402).

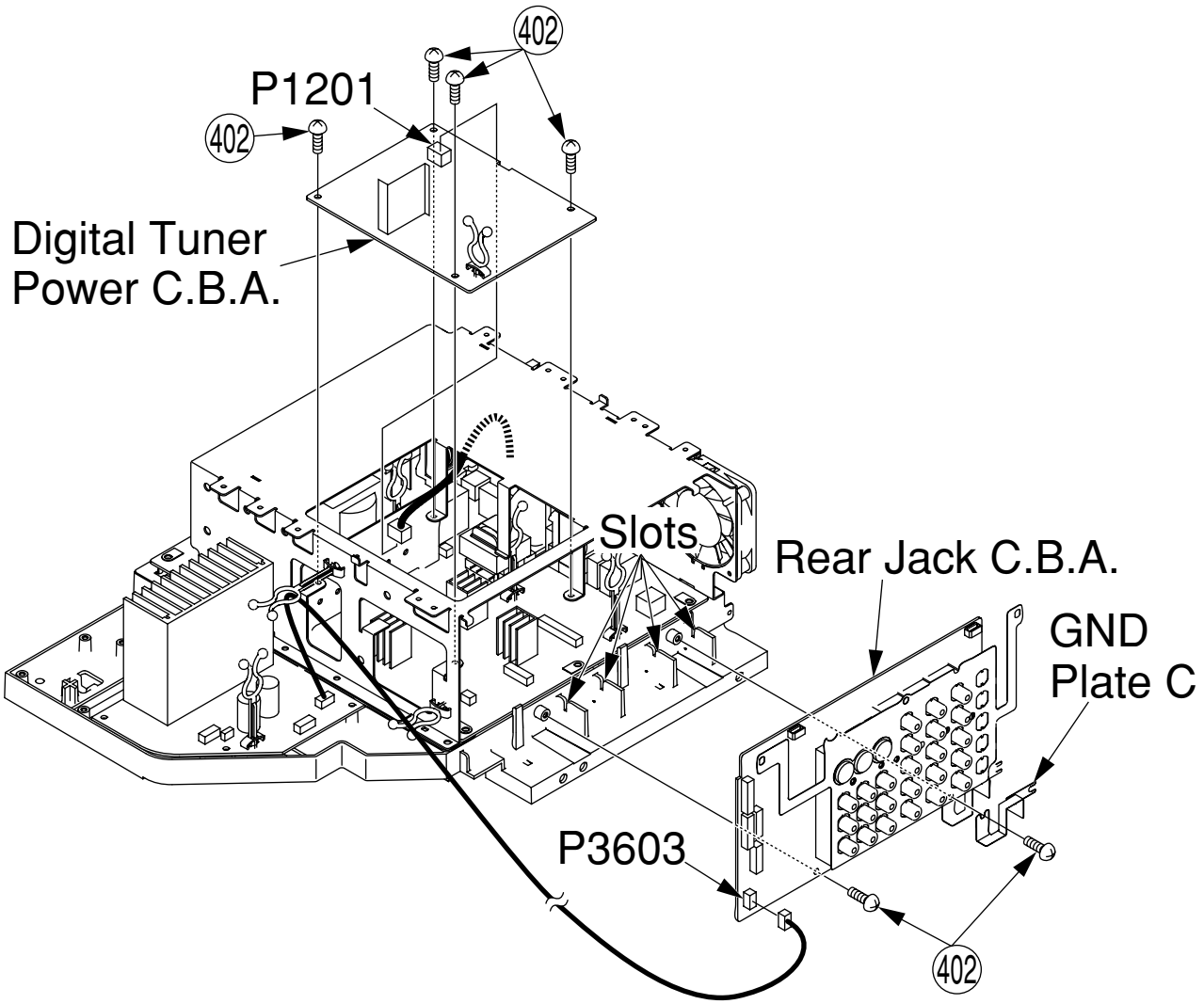


Fig. D3-4

6. 1) Disconnect Connector P4501 and release from the clamper.
   2) Remove the Audio Amp C.B.A. by removing the 4 Screws (402).
   Note: The Audio Amp C.B.A. can be removed from the TV/Tuner Unit at any time.

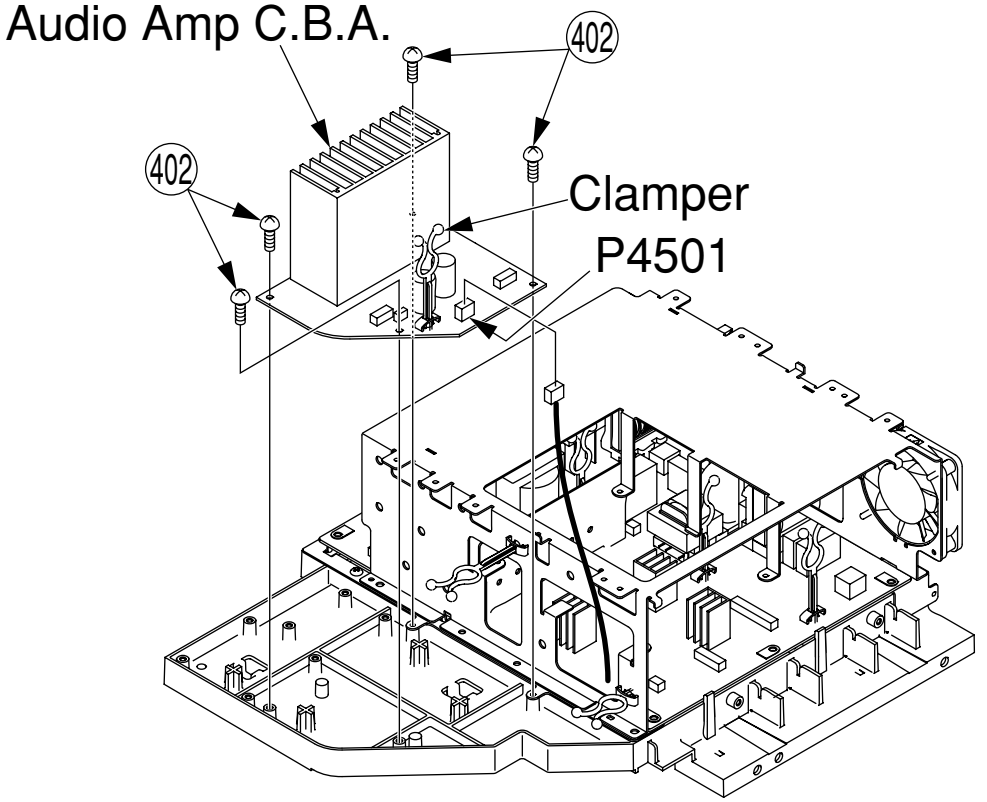


Fig. D3-5

Note:

After servicing the Power C.B.A., be sure to connect the Connector P1006 on the Power C.B.A. to install the Fan 4.

7. 1) Disconnect Connector P1006 and release from the clamper.
   2) Remove the Main P.C.B. Frame by removing the 6 Screws (402), and remove the Fan 4 by removing the 2 Screws (435).
   3) Remove the Power C.B.A. by removing the 5 Screws (411).
   4) Disconnect Connector P804 (AC Cord) and release from the clamper.

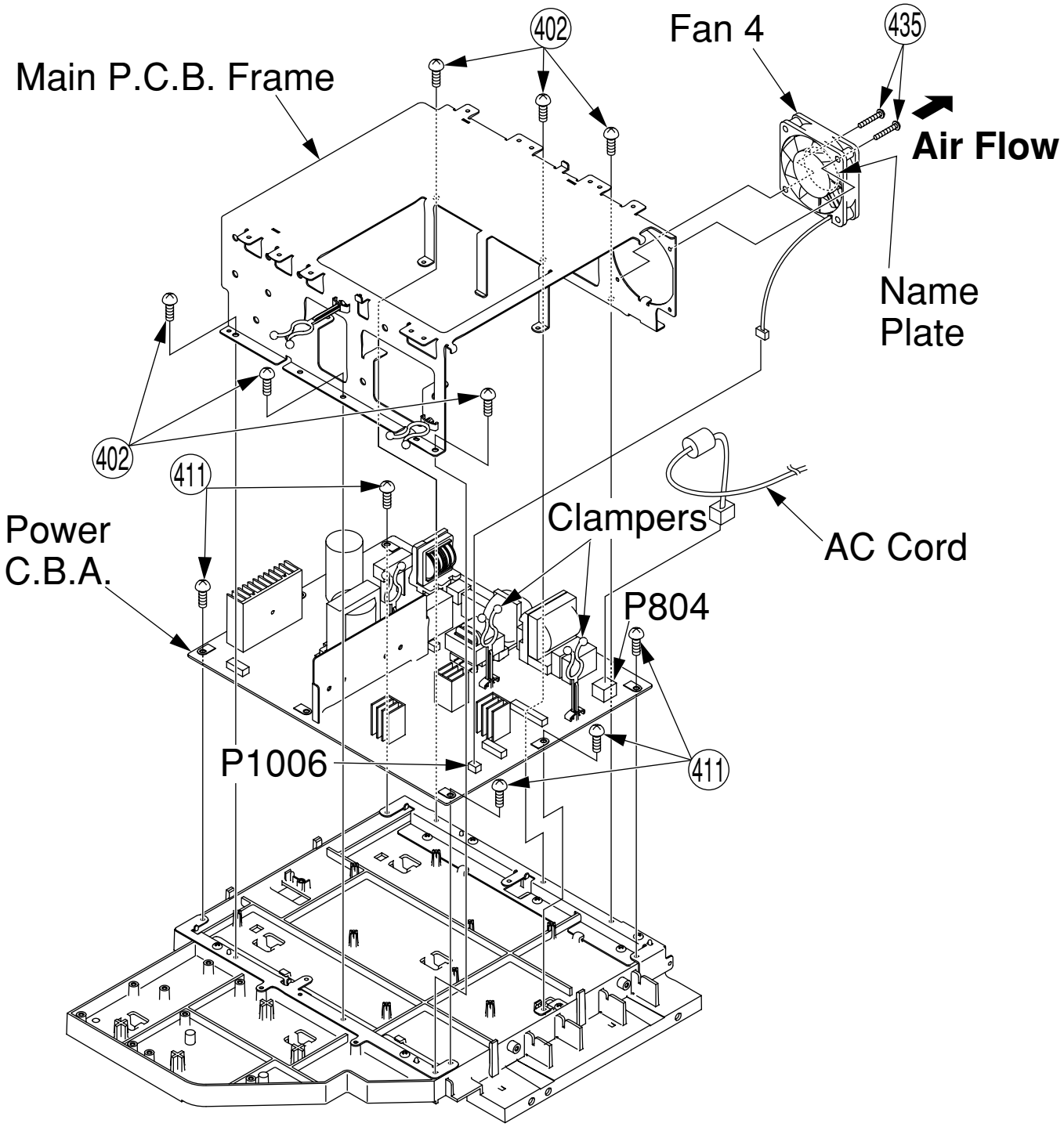


Fig. D3-6

Reassembly Note for Fan 4:
Install the Fan 4 with the 2 Screws (435) so that the name plate (manufacture's name etc.) face out (visible from the outside).

Note:

After servicing the Power C.B.A., be sure to connect the Connector P1006 on the Power C.B.A. to install the Fan 4.

REMOVAL OF THE SCREEN UNIT AND THE SPEAKER FROM THE DISPLAY

1. 1) Remove the Front Cover Unit from the 8 latches.
   2) Remove the Optical Cover by removing the 2 Screws (454).
   3) Remove the 2 Screws (401) from front side.

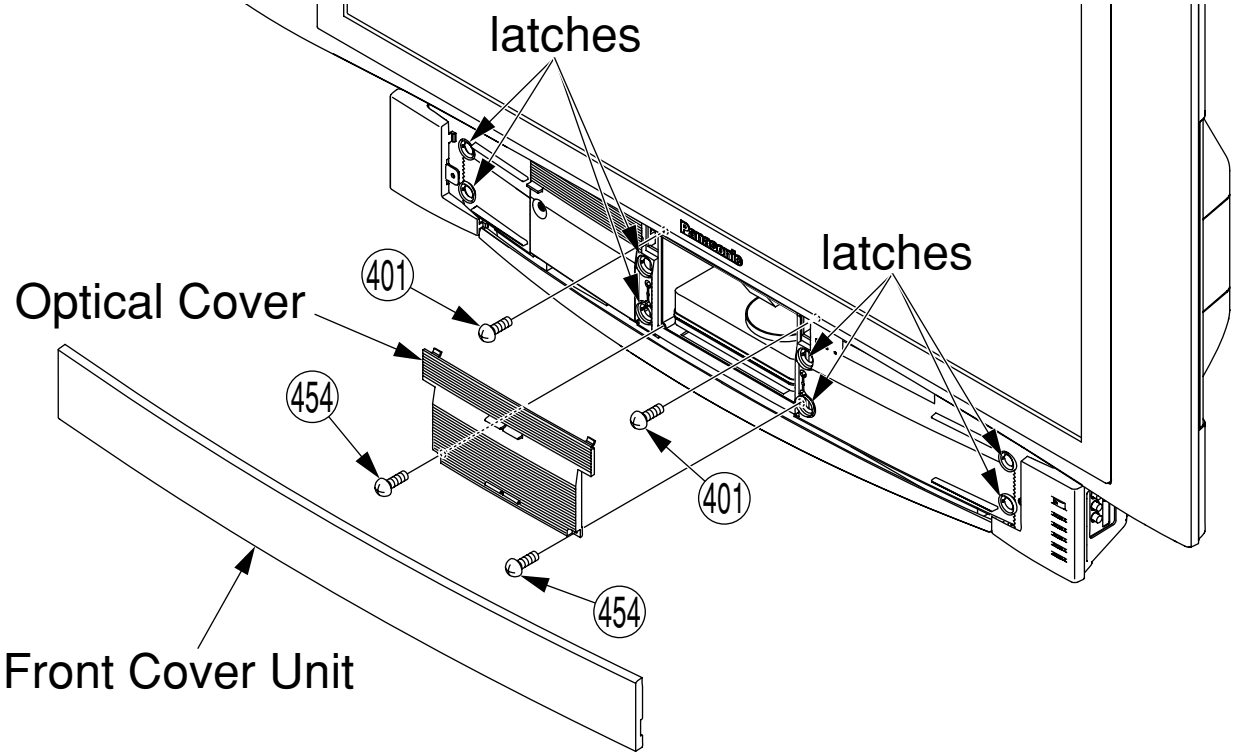


Fig. D4-1

2. **(PT-43LCX64/PT-50LCX64)**
   Remove the Rear Cover by removing the 18 Screws (401), refer to Fig. D1-1-1.
   (PT-60LCX64)
   Remove the Rear Cover by removing the 20 Screws (401, 464), refer to Fig. D1-1-2.

3. 1) Disconnect Connector P4503 (speaker cables) and release it from the clamper.
   2) Remove the 2 Screws (401) from rear side, and remove the Display.

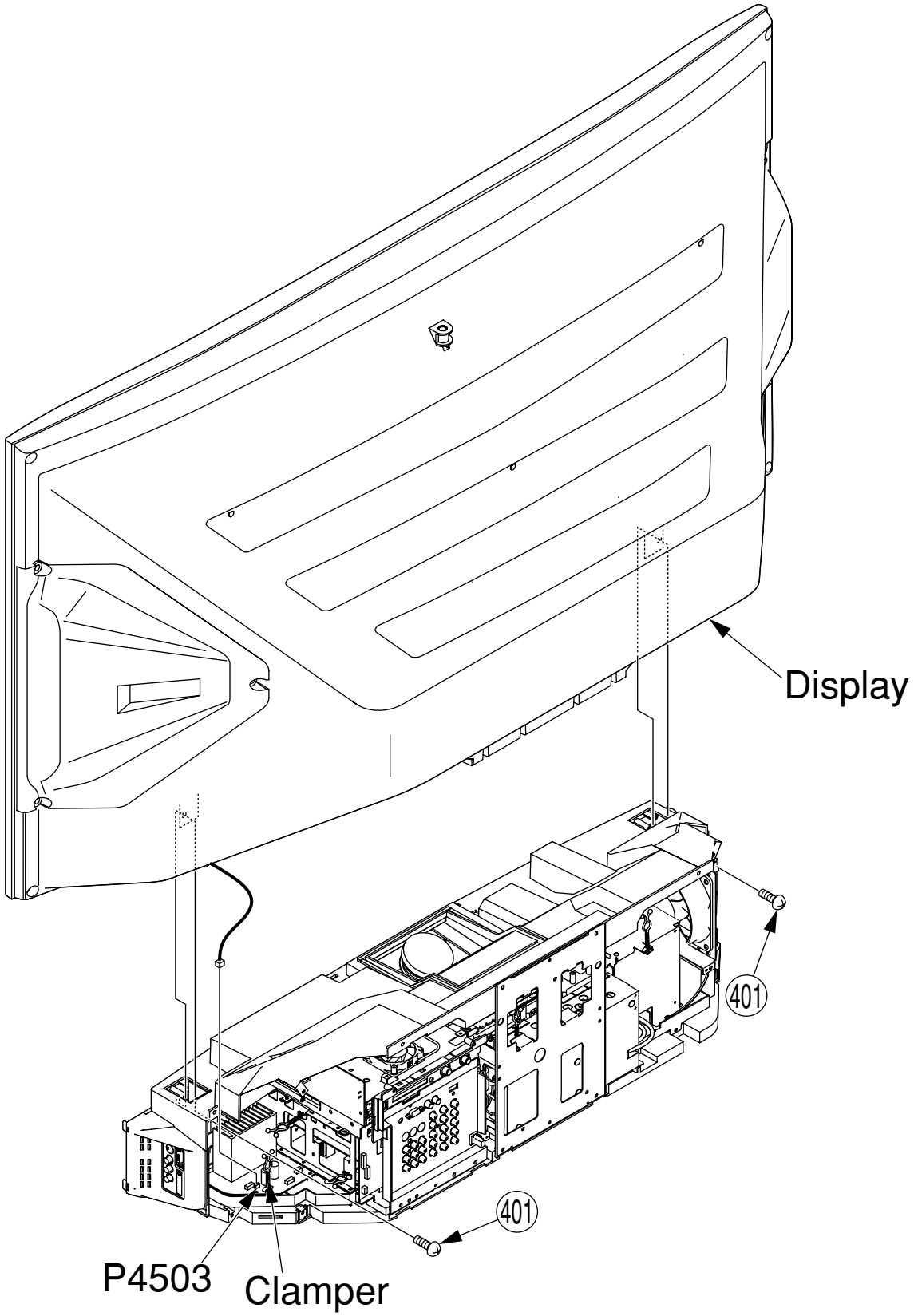


Fig. D4-3

4. 1) Remove the Speaker-L and the Speaker-R by removing the 6 Screws (477, 478) and disconnect the connectors P4553.
   2) **(PT-43LCX64/PT-50LCX64)**
   Remove the Screen Unit by removing the 16 Screws (401).

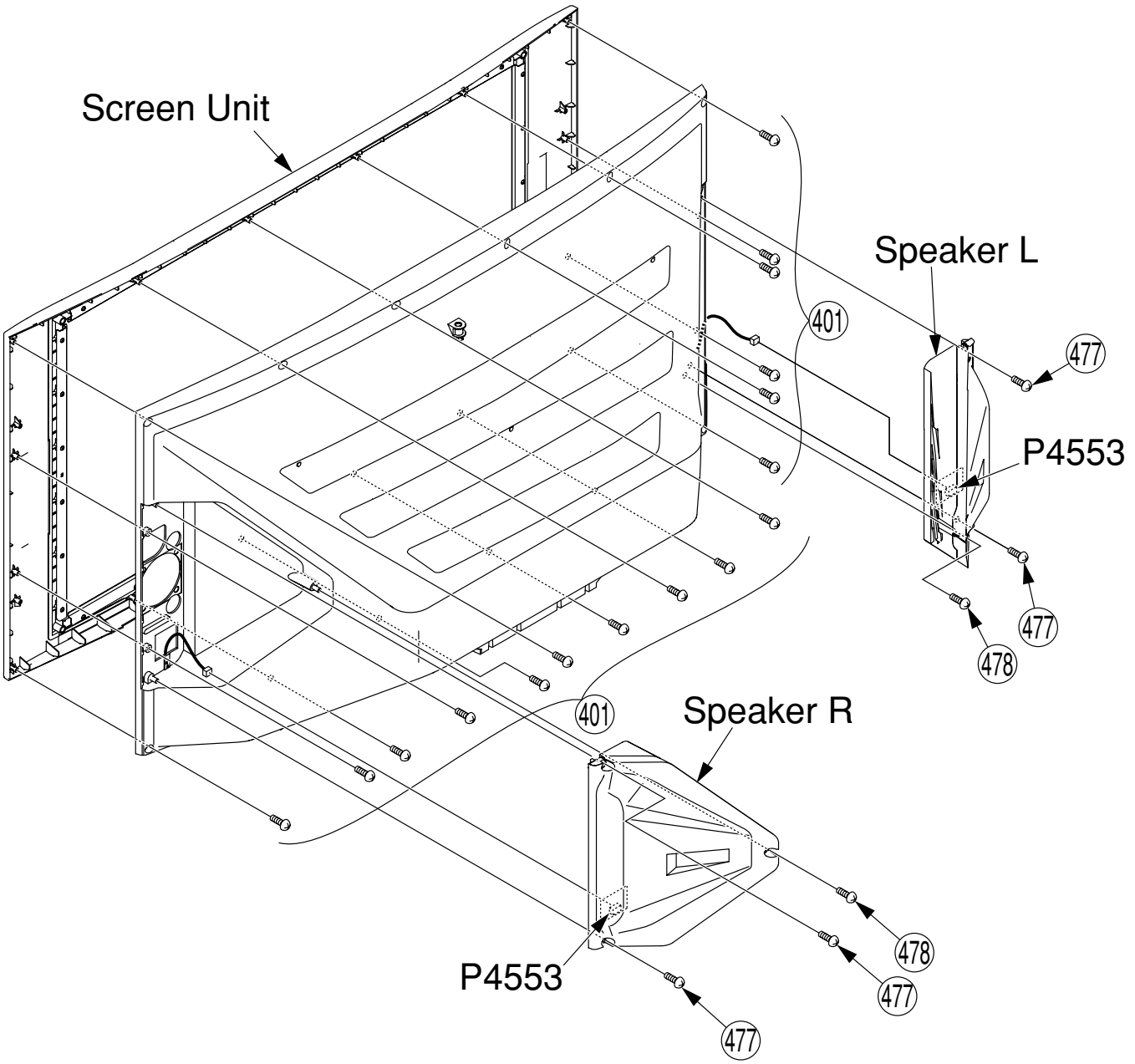


Fig. D4-4-1

2) **(PT-60LCX64)**
Remove the Screen Unit by removing the 26 Screws (401).

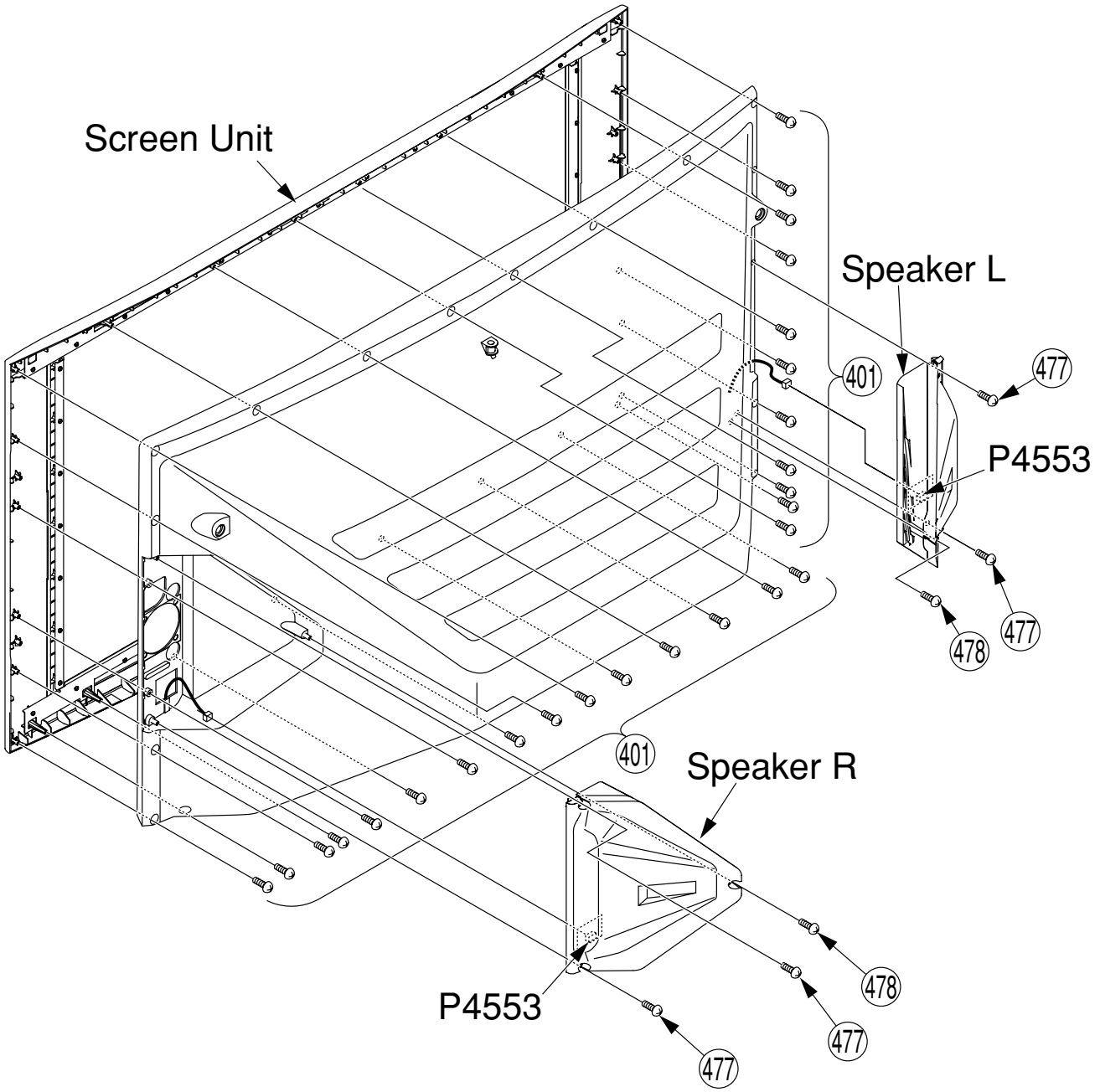


Fig. D4-4-2

5. **(PT-43LCX64)**
Remove the 2 Screen Plate H and 2 Screen Plate V by removing 26 Screws (401), and remove the Fresnel Lens and the Lenticular Screen.
(PT-50LCX64)
Remove the 2 Screen Plate H and 2 Screen Plate V by removing 30 Screws (401), and remove the Fresnel Lens and the Lenticular Screen.

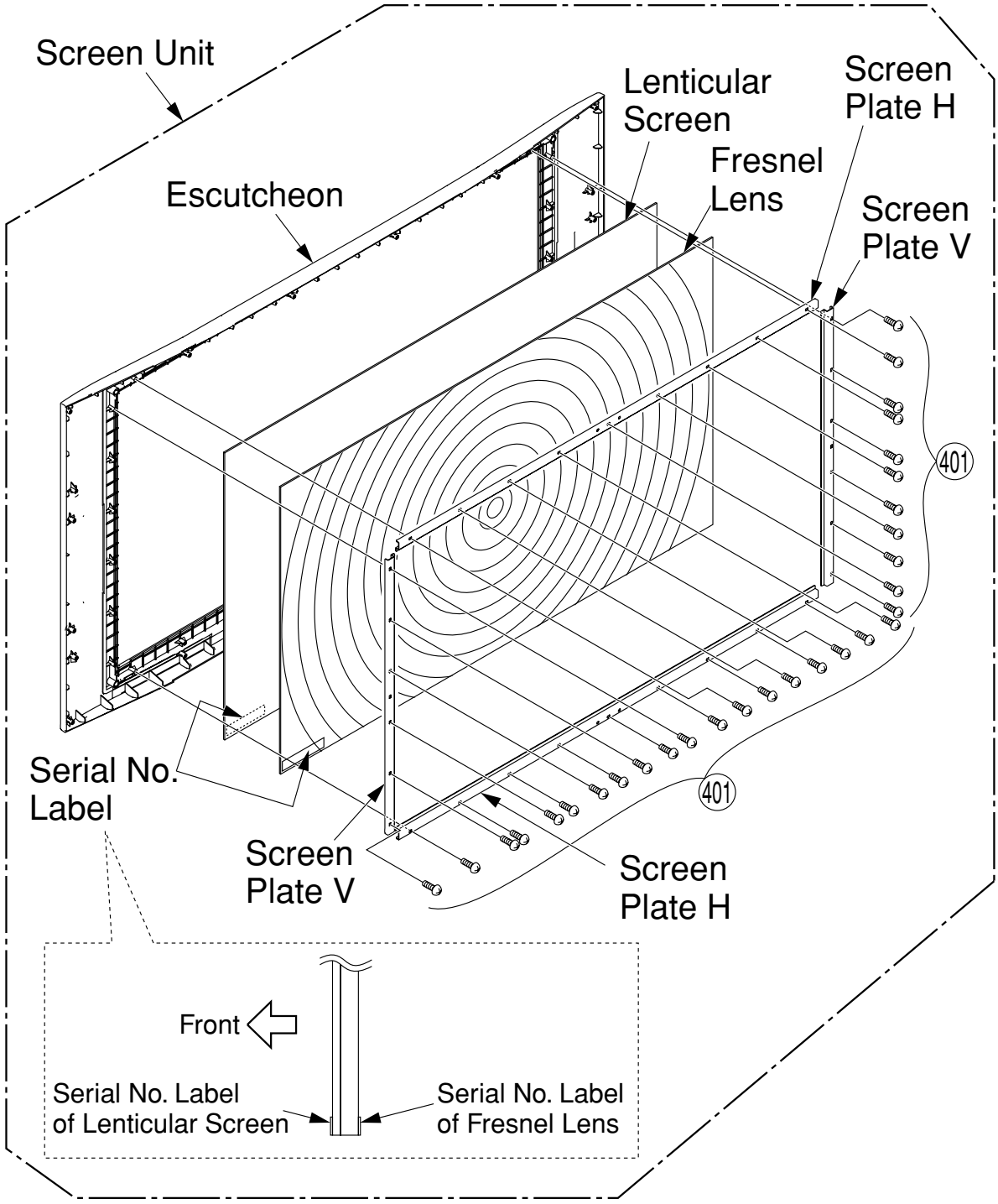
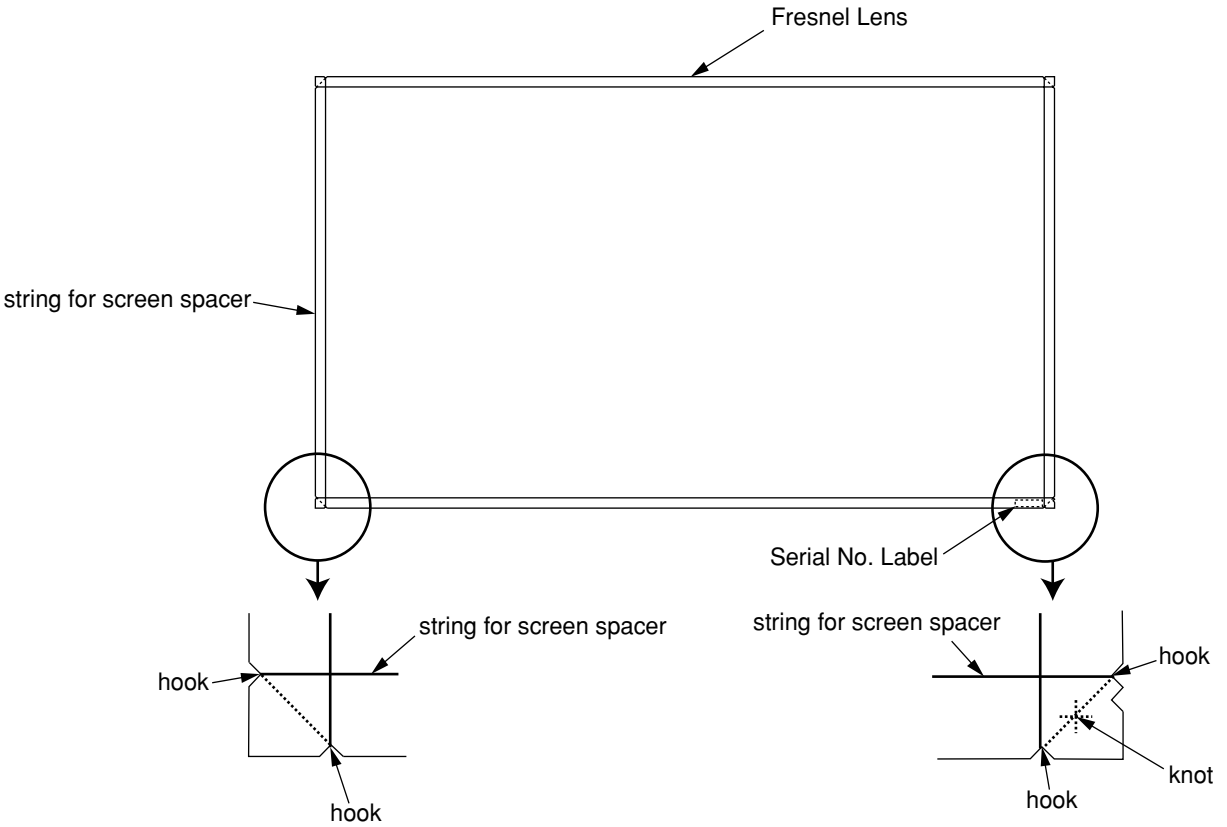


Fig. D4-5-1

Reassembly Note:
Install them so that Serial No. Labels are on the each outside as shown above.

Replacement Note for Screen Unit:
The Screen Unit is supplied as a unit, or the individual parts (Fresnel Lens, Lenticular Screen) in the Screen Unit are also supplied. When replacing the Fresnel Lens and the Lenticular Screen, take care that dust, etc., does not adhere between the Fresnel Lens and the Lenticular Screen. Due to this risk, it is strongly recommended to replace the Screen Unit as a unit.

(PT-50LCX64)
Reassembly Note for 4 Spacers:
Wind the string for screen spacer on the Fresnel Lens a shown.



(PT-60LCX64)
Remove the 2 Screen Plate H and 2 Screen Plate V by removing 40 Screws (465), and remove the Fresnel Lens and the Lenticular Screen.

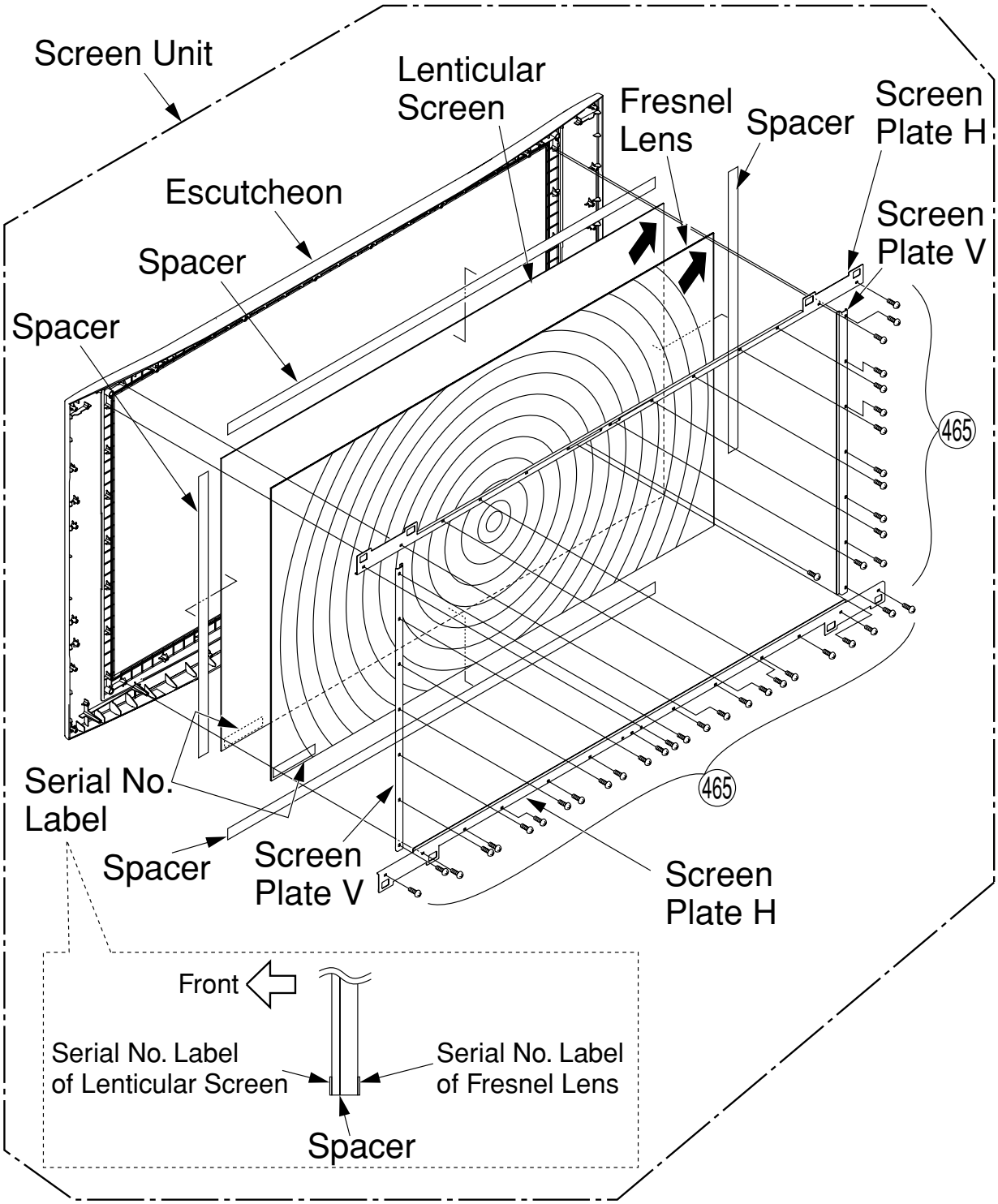


Fig. D4-5-2

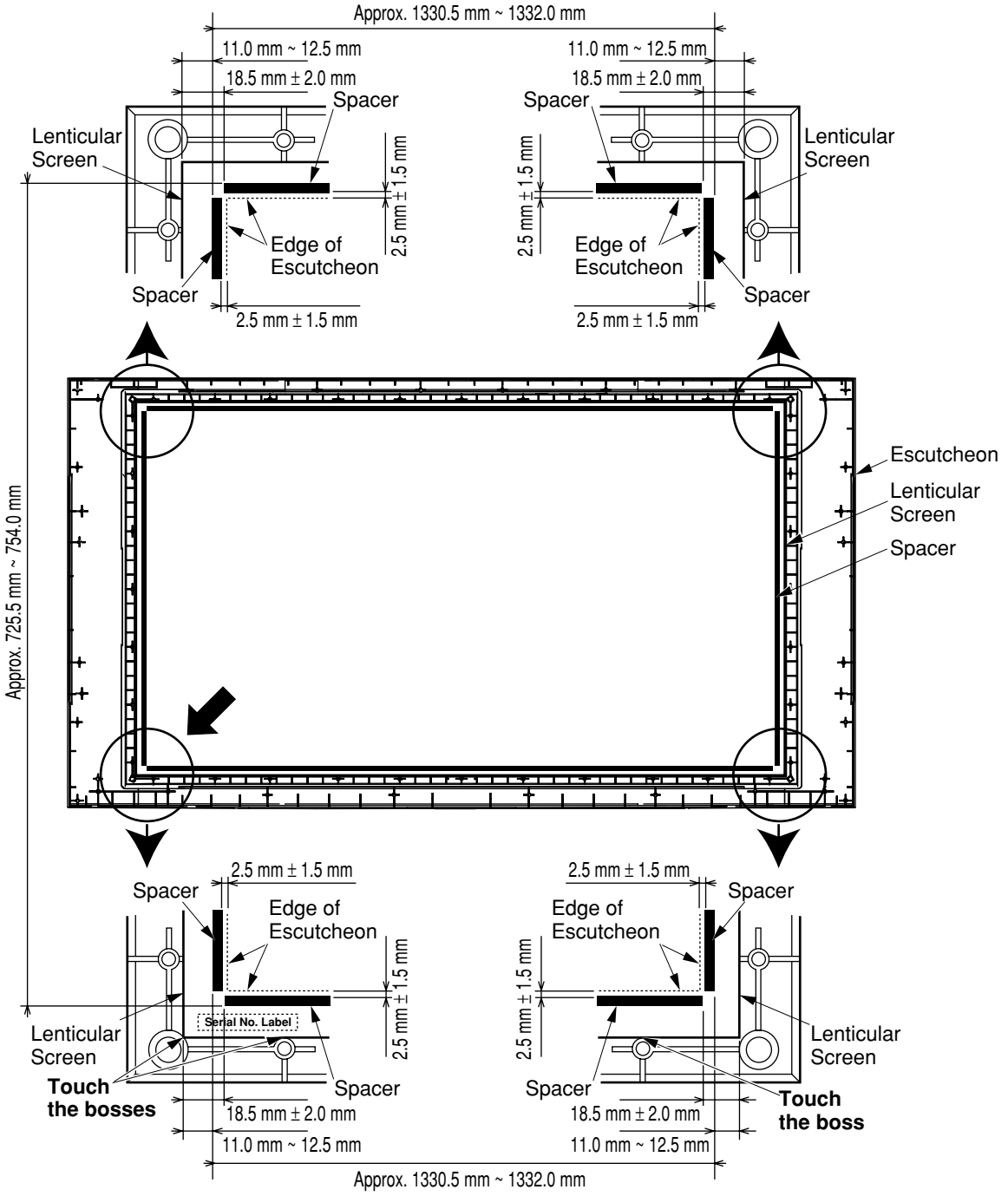
Reassembly Note:
Install them so that Serial No. Labels are on the each outside as shown above.

Replacement Note for Screen Unit:
The Screen Unit is supplied as a unit, or the individual parts (Fresnel Lens, Lenticular Screen) in the Screen Unit are also supplied. When replacing the Fresnel Lens and the Lenticular Screen, take care that dust, etc., does not adhere between the Fresnel Lens and the Lenticular Screen. Due to this risk, it is strongly recommended to replace the Screen Unit as a unit.

(PT-60LCX64)

Reassembly Note for 4 Spacers:

Place the 4 Spacers on the Lenticular Screen as shown.



REMOVAL OF THE MIRROR FROM THE BACK COVER

(PT-43LCX64/PT-50LCX64)

1. Remove the Screen Unit. Refer to Steps 1~4 in "REMOVAL OF THE SCREEN UNIT AND THE SPEAKER FROM THE DISPLAY."
2. 1) Remove the 2 Mirror Holder H and the 2 Mirror Holder V Unit by removing the 12 Screws (401).
   2) Remove the Mirror from the top by releasing the Back Cover slots.
   Note: Be careful that the Mirror does not fall down when removing.

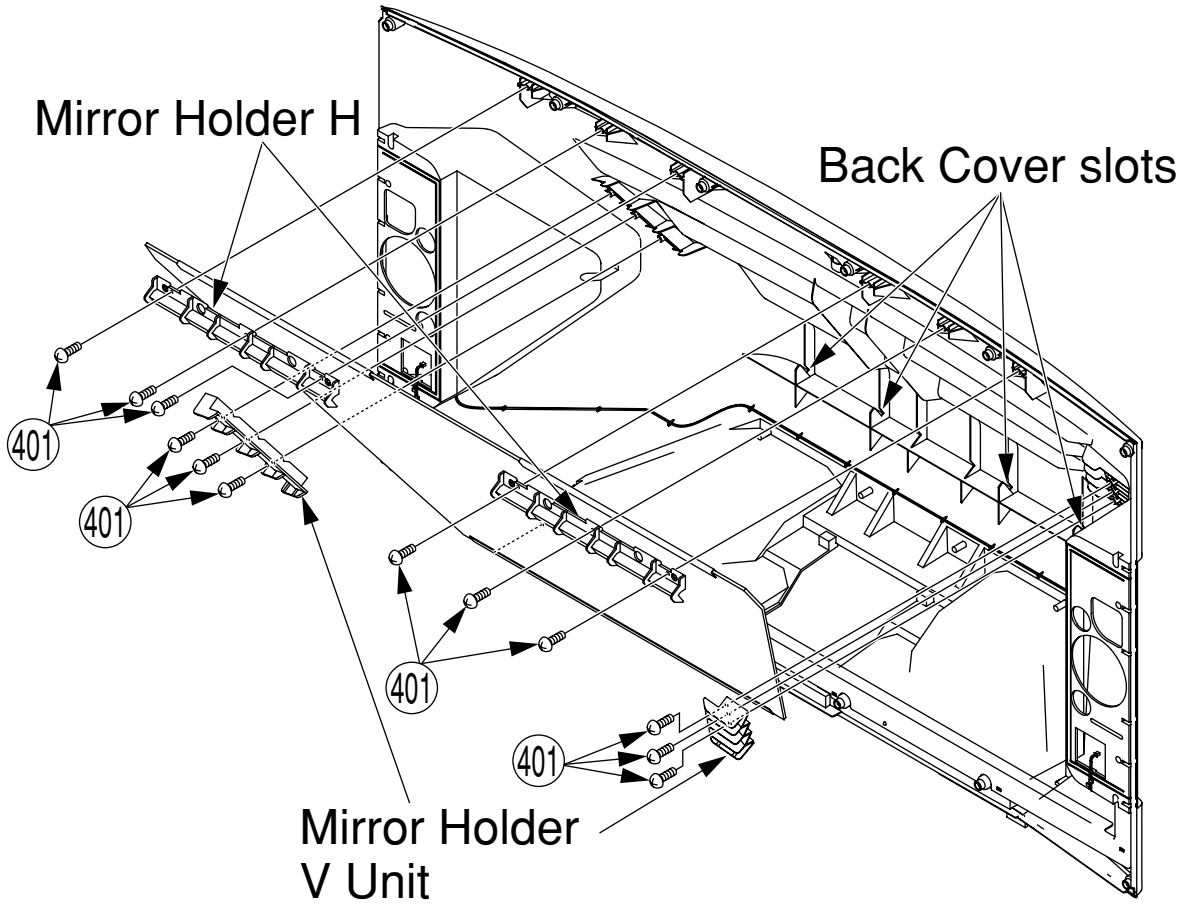
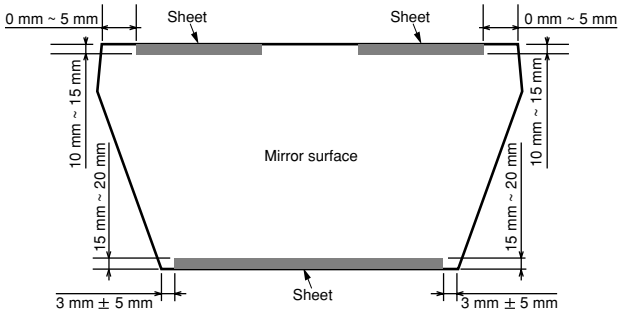


Fig. D4-6-1

Reassembly Notes for Mirror:
Install the Mirror as following procedures:

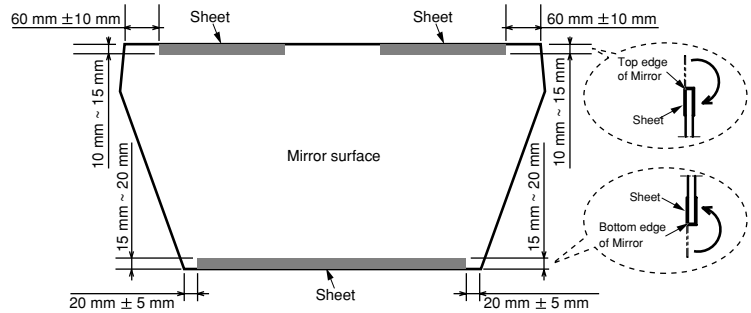
1) Place the 3 sheets on the top and bottom edges of the Mirror.

(PT-43LCX64)



<Front View>

(PT-50LCX64)



<Front View>

Fig. D4-7-1

2) Hold the sheet portions of the Mirror, and insert the Mirror from the top into the Back Cover slots carefully. When handling the Mirror, do not touch the Mirror surface.
3) Install the 2 Mirror Holder H and the 2 Mirror Holder V on the Mirror and tighten the 12 Screws (401).

REMOVAL OF THE MIRROR FROM THE BACK COVER

(PT-60LCX64)

1. Remove the Screen Unit. Refer to Steps 1~4 in "REMOVAL OF THE SCREEN UNIT AND THE SPEAKER FROM THE DISPLAY."
2. 1) Remove the 3 Mirror Holder H and the 2 Mirror Holder V Unit by removing the 15 Screws (401).
   2) Remove the Mirror from the top by releasing the Back Cover slots.
   Note: Be careful that the Mirror does not fall down when removing.

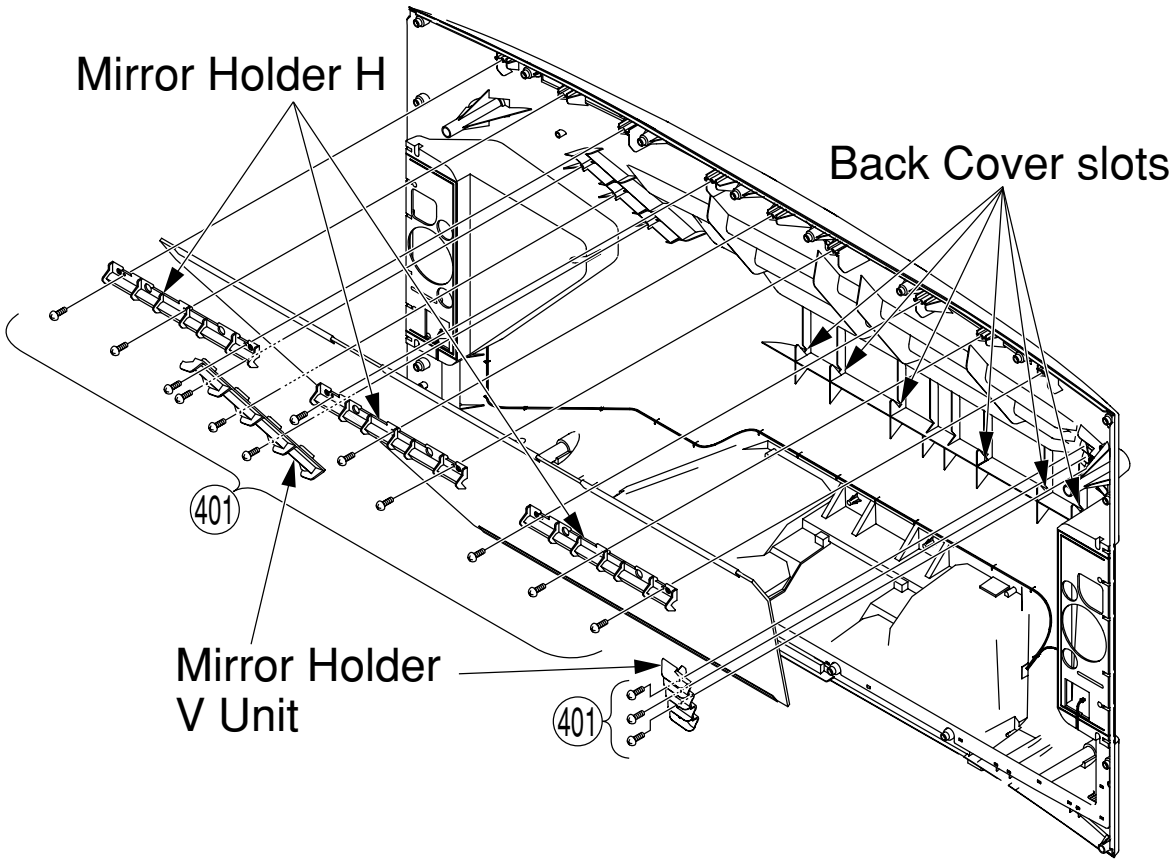


Fig. D4-6-2

Reassembly Notes for Mirror:
Install the Mirror as following procedures:

1) Place the 3 sheets on the top and bottom edges of the Mirror.

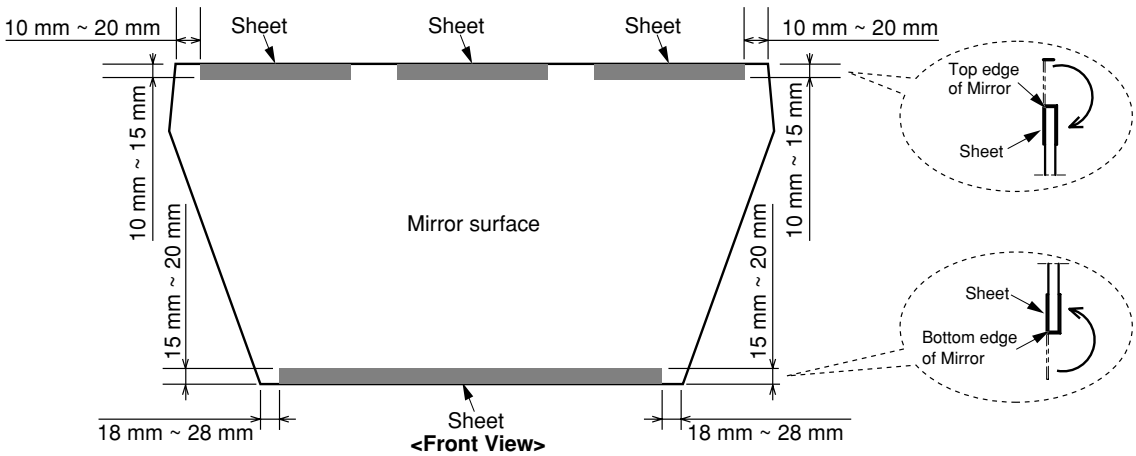


Fig. D4-7-2

2) Hold the sheet portions of the Mirror, and insert the Mirror from the top into the Back Cover slots carefully. When handling the Mirror, do not touch the Mirror surface.
3) Install the 3 Mirror Holder H and the 2 Mirror Holder V on the Mirror and tighten the 15 Screws (401).

REMOVAL OF THE FRONT JACK C.B.A. AND THE OPERATION C.B.A. FROM THE CABINET

1. 1) Remove the Rear Cover by removing the 18 Screws or 20 Screws **(PT-60LC14)**.
   2) Disconnect Connector P6305 and release it from the clamper.
2. 1) Remove the Front Cover Unit from the 8 latches.
   2) Remove the Screw (454).
   3) Slide the Front Side Cover R with the Operation C.B.A. as indicated by the arrow to release the 4 slots.
   4) Pull off the Operation C.B.A. from front side.
   5) Remove the Operation C.B.A. and the Operation Button Unit from the Front Side Cover R by removing the 4 Screws (421).

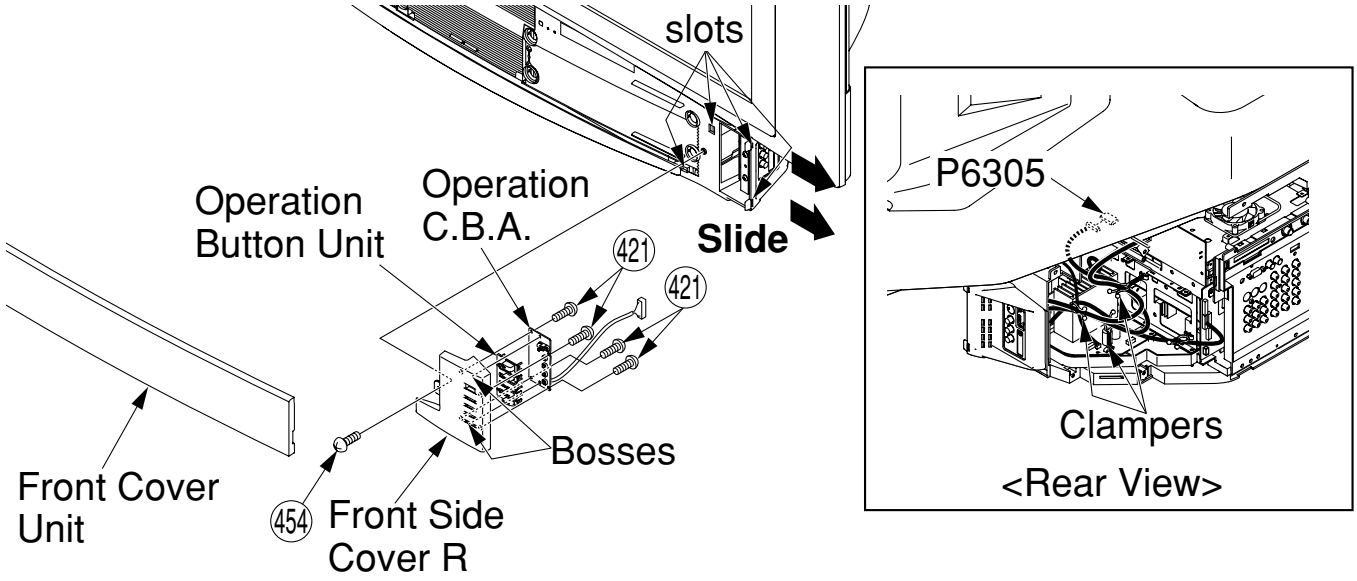


Fig. D5-1

3. 1) Disconnect Connectors P3502, P5501 and release them from the clampers.
   2) Remove the 2 Screw (401).
   3) Pull off the Front Jack C.B.A. from front side.
   4) Remove the Front Jack C.B.A. from the Side Jack Holder by removing the 2 Screws (421) and releasing the 2 Locking Tabs.

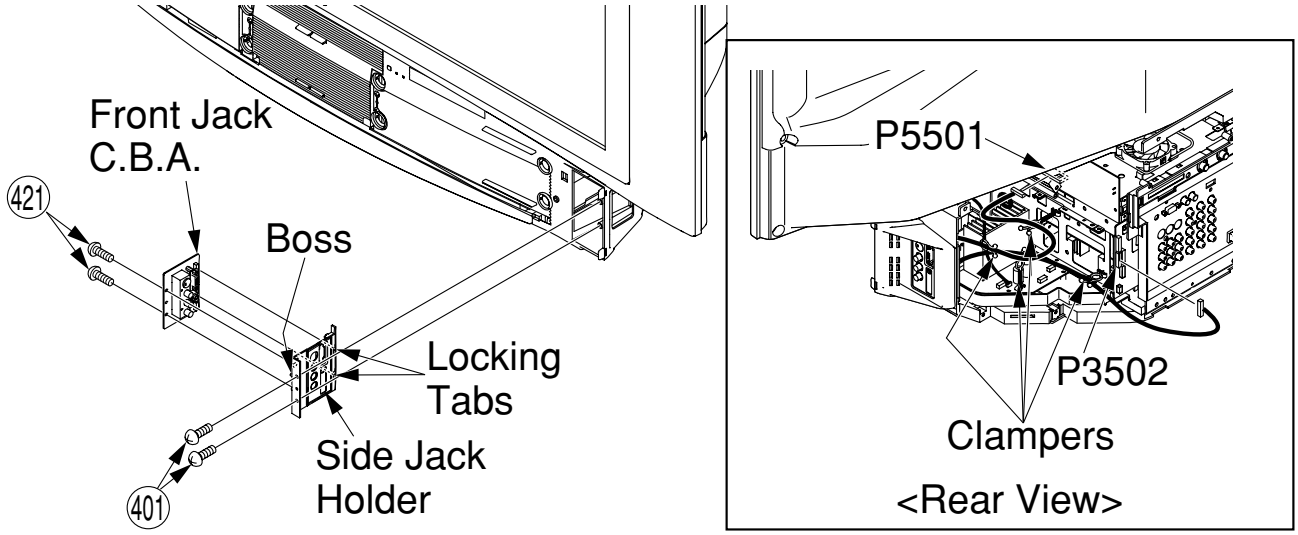


Fig. D5-2

REMOVAL OF THE COVER SWITCH C.B.A. FROM THE CABINET

1. Remove the Projection Unit. Refer to Steps 1~2 in "REMOVAL OF THE PROJECTION UNIT FROM THE CABINET."
2. 1) Remove the Front Cover Unit from the 8 latches.
   2) Remove the Optical Cover by removing the 2 Screws (454).
   3) Remove the Screw (401) from the front side.

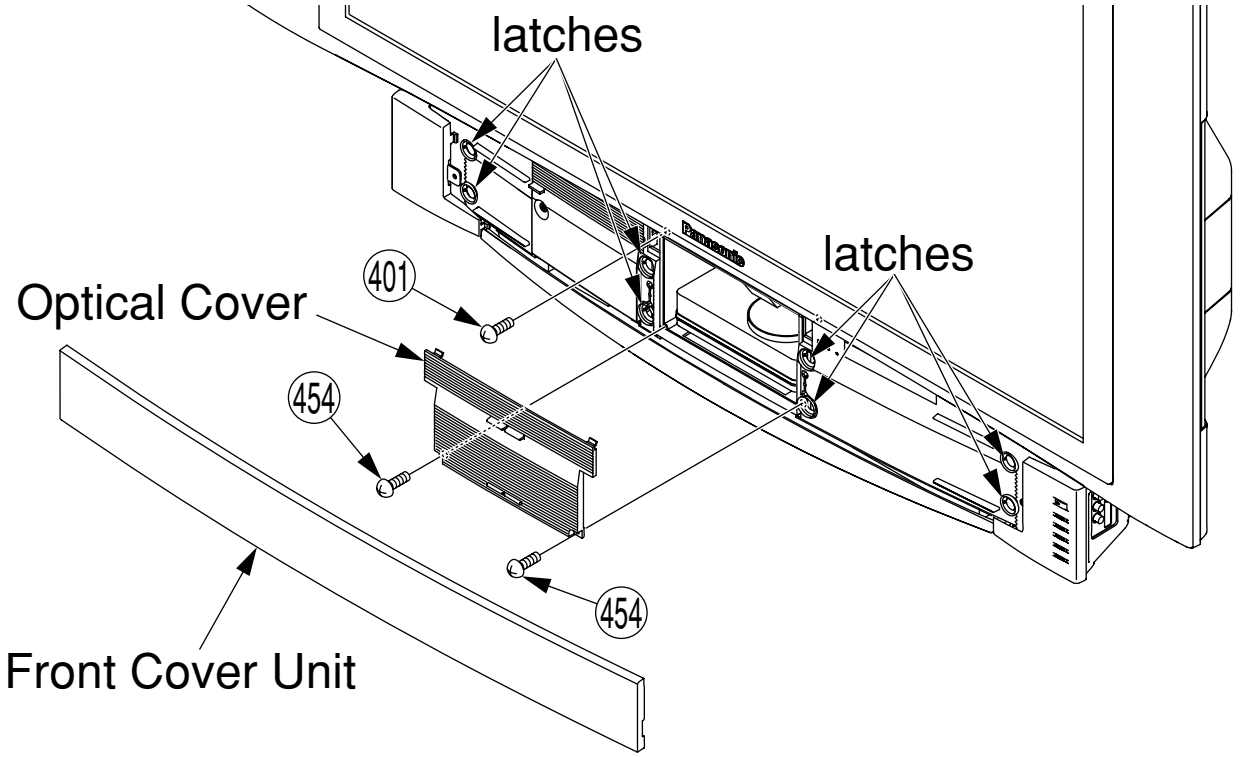


Fig. D6-1

4) To remove the Cover Switch C.B.A., remove the Display Support Plate L with the Cover Switch C.B.A. by removing the 2 Screws (401).
5) Remove the Cover Switch C.B.A. by removing the Screw (402).

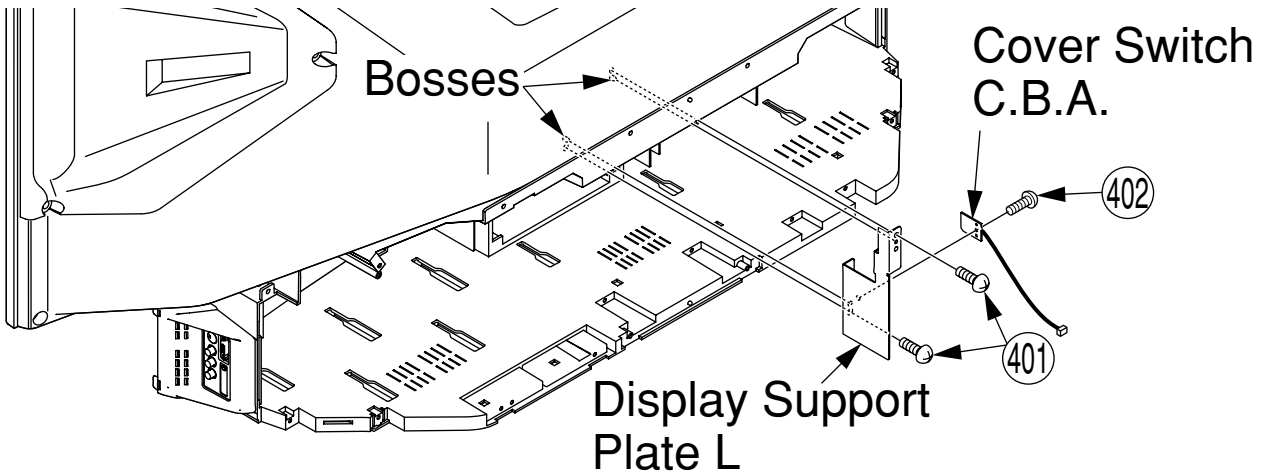


Fig. D6-2

Reassembly Note:
When installing the Display Support Plate L with the Cover Switch C.B.A., install it with the Lamp Cover removed.

REMOVAL OF THE BALLAST HOLD PLATE, THE BALLAST SHIELD CASE TOP, THE BALLAST SHIELD CASE BOTTOM

1. Remove the Ballast C.B.A. Refer to Steps 1~7 in "REMOVAL OF THE BALLAST C.B.A. AND THE TV/TUNER UNIT FROM THE CABINET."
2. Remove the Ballast Hold Plate by removing the 2 Screws (452).
3. Release the Connector Cable P1301, P1302, and P1305 from the Clamper.
4. Remove the Ballast Shield Case Top.
5. Remove the Ballast Shield Case Bottom by removing the 2 Screws (411), and releasing the 3 Spacers.

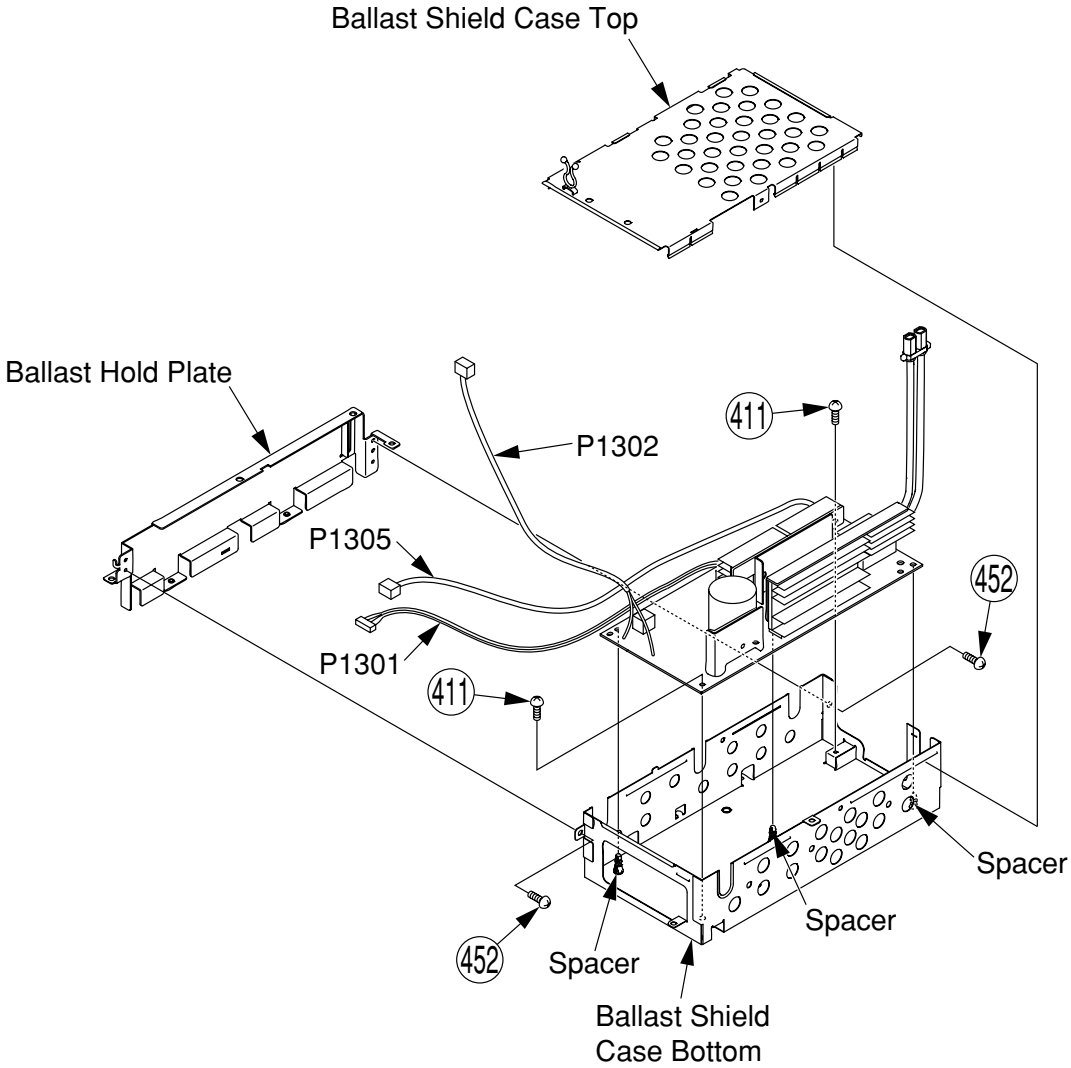


Fig. D7

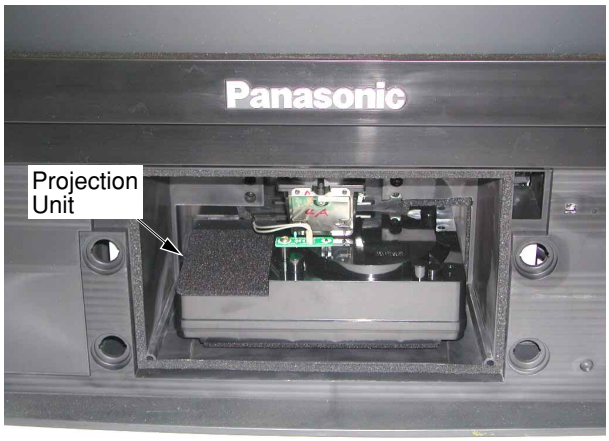
WHEN REINSTALLING THE PROJECTION UNIT INTO THE UNIT AT THE USER'S LOCATION:

The following ADJUSTMENT of the Projection Unit must be performed.

a. Mechanical Picture Position Adjustment
b. Focus Adjustment
   Note:
   Perform this adjustment only if necessary. (Normally, it will not be necessary.)
c. Electrical Picture Position Adjustment

Preparation of ADJUSTMENT:

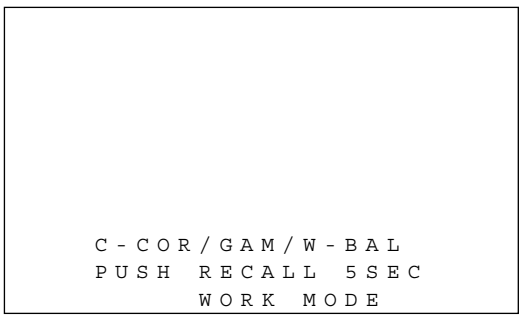
1. Install all parts except the Front Cover Unit and the Optical Cover.



(With Front Cover Unit and Optical Cover removed)
<Front View>
Fig. M1-1

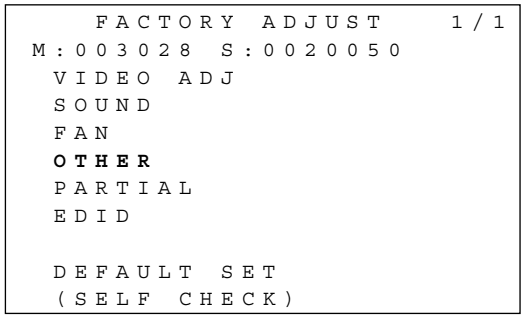
Note:
When the rear cover is disassembled, the screen can be moved back and forth, which could affect the video display vertical position. This could also cause the vertical adjust to be at or near its limit.
Only try the picture position adjustment with the rear cover assembled!

2. Turn the power on.
3. Press and hold the VOLUME DOWN button on the unit and the RECALL key on the remote for more than 5 seconds in power on condition. The unit will go into Work Mode. ("WORK MODE" will appear on the screen.)



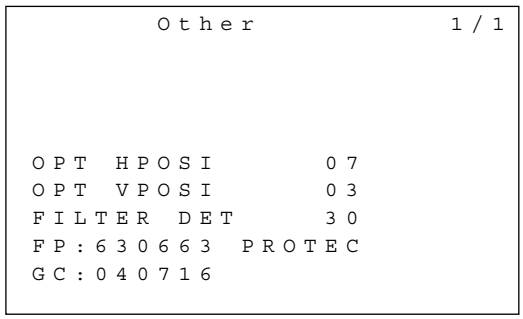
<Work Mode>
Fig. M1-2

4. 1) Then, press and hold the VOLUME DOWN button on the unit and the SWAP key on the remote for more than 1 second. The unit will go into the Factory Adjust Mode. (FACTORY ADJUST menu will appear.)



<Factory Adjust mode>
Fig. M1-3

2) Then, press the CH UP/DOWN key on the remote to select "OTHER" on menu and press the OK key. (OTHER menu will appear.)



<Factory Adjust Mode>
(OTHER menu 1/1)

Fig. M1-4

5. Press the VOLUME UP/DOWN key on the remote. (Focus screen will appear.)

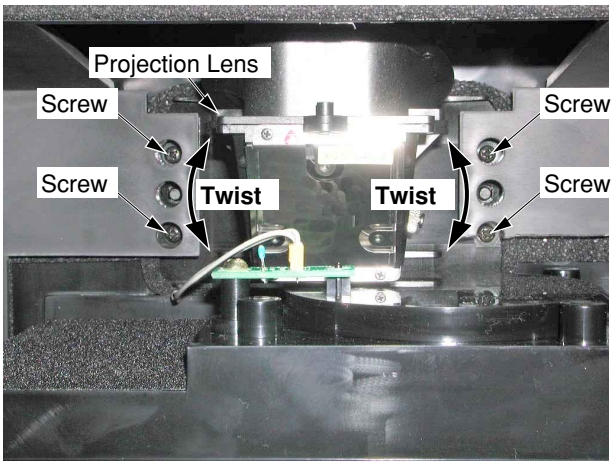
<Focus Screen>

To release this mode:

1. After completing the ADJUSTMENT, press the CH UP/DOWN key on the remote to return to the OTHER menu.
2. Then, press RECALL key twice to return to Work Mode, and press and hold the VOLUME DOWN button on the unit and the RECALL key on the remote for more than 5 seconds. Alternatively, turn off the power.
3. Then, install the Optical Cover with the 2 Screws and the Front Cover Unit.

a. Mechanical Picture Position Adjustment (Tilt)

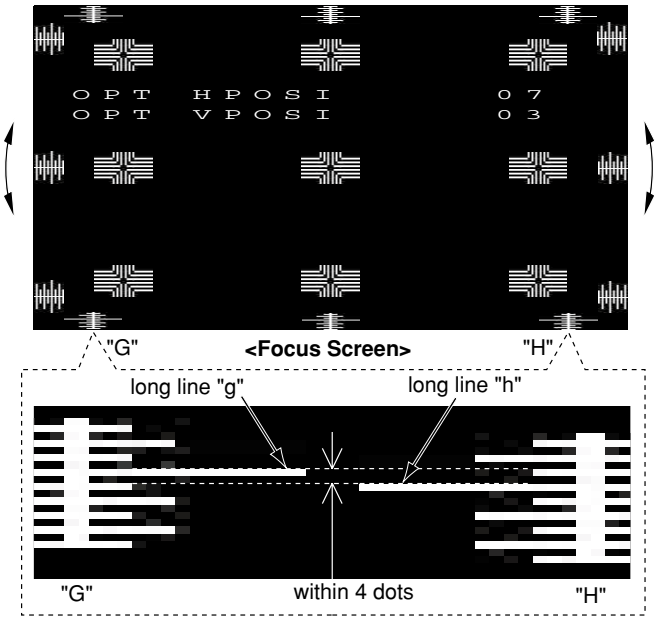
1) Loosen the 4 Screws on the Projection Unit.



<Front View>

Fig. M1-5

2) Adjust the Projection Lens by twisting so that the long line "g" and the long line "h" are within 4 dots. (The long line "g" and the long line "h" will be almost aligned horizontally.)

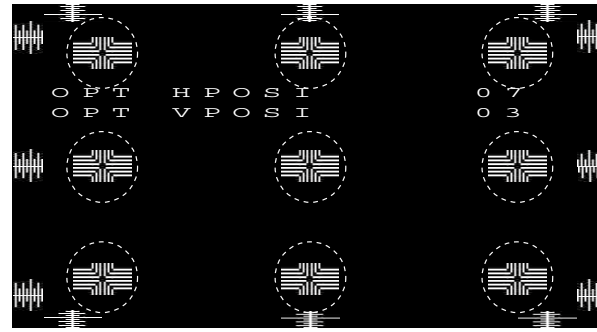


Note:
If the Projection Lens is twisted left, the Focus Screen twists left.
If the Projection Lens is twisted right, the Focus Screen twists right.

3) Tighten the 4 Screws while fixing the Projection Lens.

b. Focus Adjustment

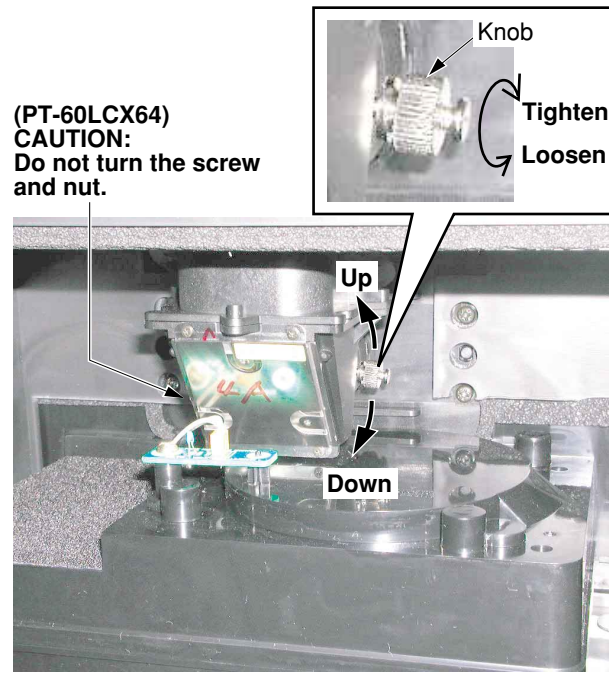
1) Confirm that each of the pixels in the nine portions is clearly visible.



<Focus Screen>

2) If not, loosen the Knob on the Projection Lens until the Knob can be moved.

(PT-60LCX64)
CAUTION:
Do not turn the screw and nut.



<Front View>

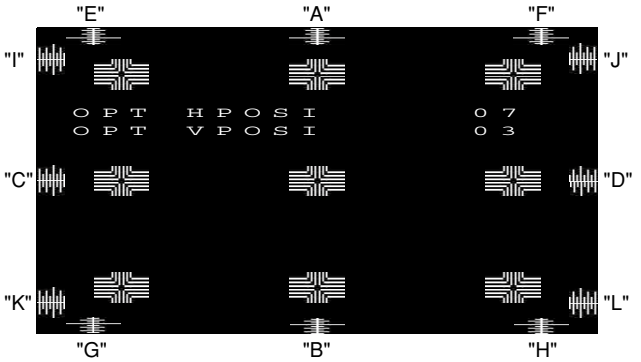
Fig. M1-6

3) Adjust the Knob by moving up or down so that each of the pixels in the nine portions is clearly visible to obtain the best focus.
4) Tighten the Knob.

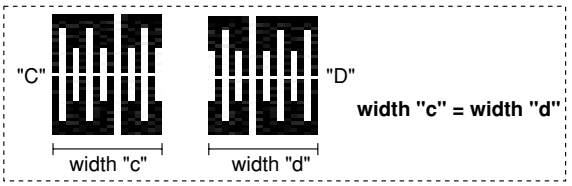
Note:
Focus Adjustment is not normally necessary. Perform this adjustment only if necessary.

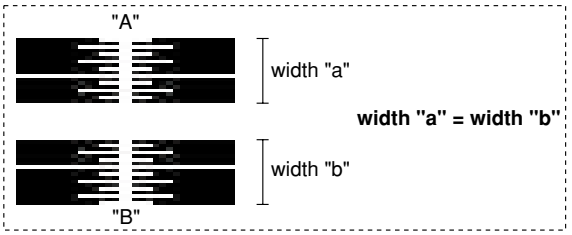
c. Electrical Picture Position Adjustment

1) Adjust OPT HPOSI so that "C" is symmetrical to "D." by pressing the VOLUME UP/DOWN key on the remote to change the value.
2) Press the CH UP/DOWN key on the remote to return to the OTHER menu.
3) Select OPT VPOSI by pressing CH UP/DOWN key on the remote.
4) Adjust OPT VPOSI so that "A" is symmetrical to “B” by pressing the VOLUME UP/DOWN key on the remote to change the value.



<Focus Screen>

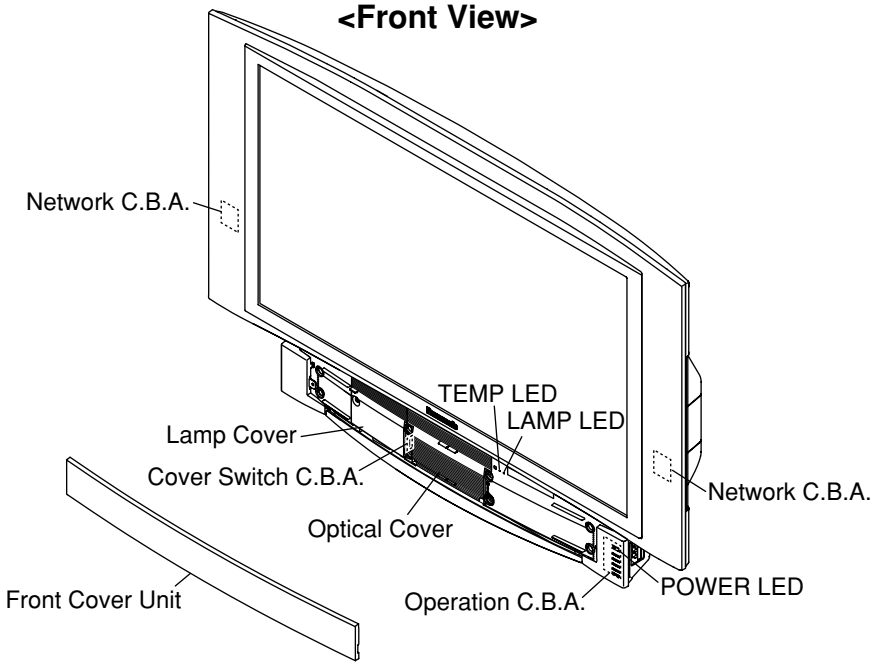




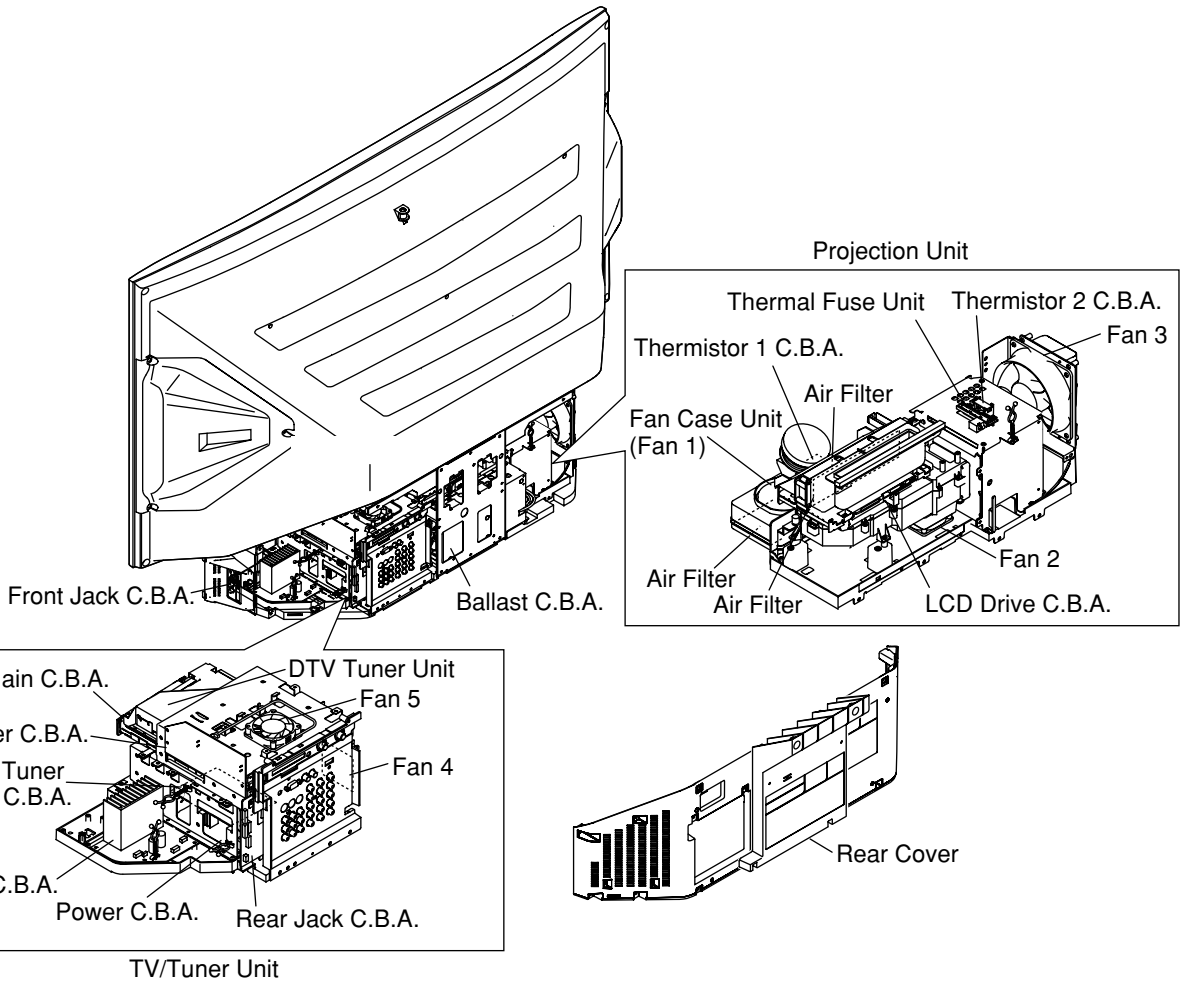
5) Confirm that all "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", "L" are each almost symmetrical.
6) If not, adjust the "OPT HPOSI" and "OPT VPOSI" (repeat steps 1-6) until the picture is in the correct position.
7) Press the CH UP/DOWN key on the remote to return to the OTHER menu.

MAIN PARTS LOCATION

<Front View>

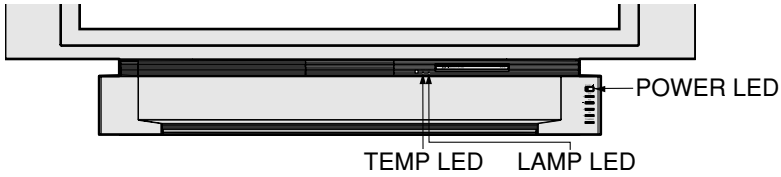


<Rear View>



ERROR INDICATION INFORMATION

Each LED indication facilitates finding the cause of the error.
When an error is detected, the Lamp comes off and the LED on the front will flash.



Error No.	Error Information	POWER LED	TEMP LED	LAMP LED	OSD (Note 2)	LAMP OFF (Note 3)
1)	**Fan1, Fan2 or Fan3 stopped**	flashes orange once every 5 seconds	-	-		○
2)	**Lamp Cover open**	flashes orange twice every 5 seconds	-	-		○
3)	**Temperature Sensor shorted or open (Thermistor 1 C.B.A.)**	-	flashes once every 5 seconds	-		○
4)	**Abnormal Temperature (Thermistor 1 C.B.A.)**	-	flashes twice every 5 seconds	-		○
5)	**Ballast Error (abnormal Lamp or Ballast)**	-	-	flashes once every 5 seconds		○
6)	**Ballast Error (abnormal Lamp voltage)**	-	-	flashes twice every 5 seconds		○
7)	**Ballast Error (abnormal temperature)**	-	-	flashes 3 times every 5 seconds		○
8)	**Ballast Error (other causes)**	-	-	flashes 4 times every 5 seconds		○
9)	**Abnormal Voltage on 33 V line**	flashes orange 5 times every 5 seconds	flashes once every 5 seconds	flashes once every 5 seconds		○
10)	**Abnormal Voltage on 9 V line**	flashes orange 6 times every 5 seconds	flashes twice every 5 seconds	flashes twice every 5 seconds		○
11)	**Abnormal Voltage on 5 V line**	flashes orange 7 times every 5 seconds	flashes 3 times every 5 seconds	flashes 3 times every 5 seconds		○
12)	**Abnormal Voltage on 3.3 V line**	flashes orange 8 times every 5 seconds	flashes 4 times every 5 seconds	flashes 4 times every 5 seconds		○
13)	**Abnormal Voltage on -5 V line**	flashes orange 9 times every 5 seconds	flashes 5 times every 5 seconds	flashes 5 times every 5 seconds		○
14)	**Abnormal Voltage on 6.5 V line**	flashes orange 10 times every 5 seconds	flashes 6 times every 5 seconds	flashes 6 times every 5 seconds		○
15)	**Temperature Sensor shorted or open (Thermistor 2 C.B.A.)**	-	flashes 3 times every 5 seconds	-		○
16)	**Abnormal Temperature (Thermistor 2 C.B.A.)**	-	flashes 4 times every 5 seconds	-		○
17)	**Clogged air filter**	-	flashes 5 times every 5 seconds	-	○	○
18)	**DTV Tuner Power Error**	flashes green all the time	-	-		○

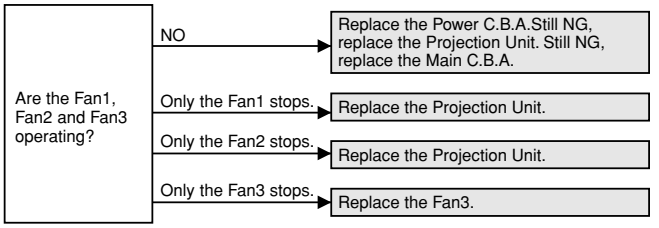
Note:

1. When two or more errors have occurred at the same time, the LED will alternate flash patterns as shown above every 5 seconds.
2. Warning OSD appears when the air filter is clogged.
3. LAMP OFF: The LED will flash immediately after the Lamp comes off.

How to solve the problem indicated by the Error Indication of LED

(All symptom is that Lamp turns off or Lamp does not light up)

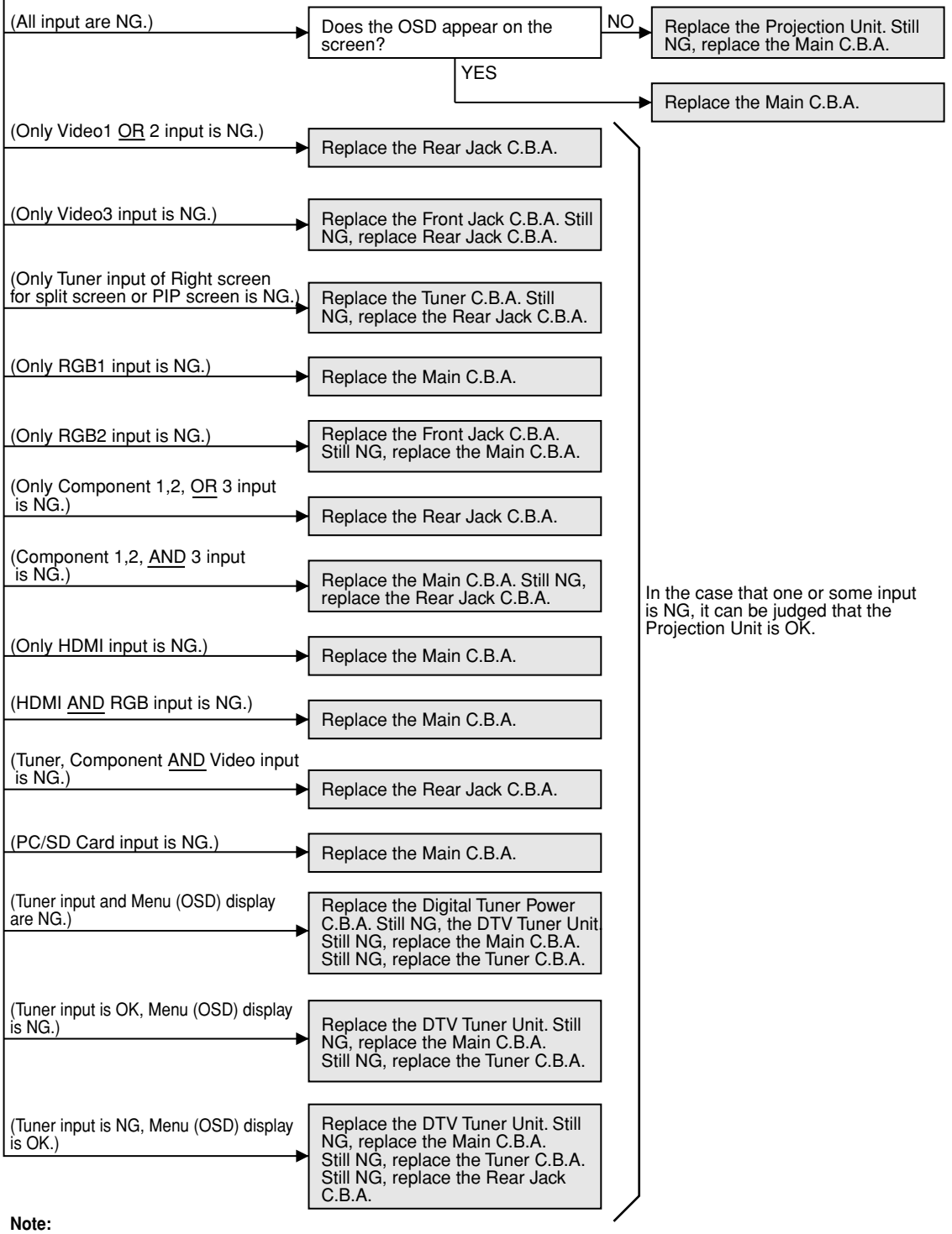
Note: Before performing the troubleshooting, confirm that all connector cables in the unit are connected to connectors correctly.

Error No.	Problem	Possible Solution
1)	Cooling Fan (Fan1, Fan2 and/or Fan3) malfunction.	
2)	Mis-installed the Lamp Cover (the Lamp cover is open).	1. Tighten the screw of the Lamp Cover. 2. If still NG, replace the Cover SW (SW2911) on the Cover Switch C.B.A. 3. If still NG, replace the Main C.B.A. 4. If still NG, replace the Projection Unit.
3)	The temperature sensor (R2811) on the Thermistor 1 C.B.A. on the Fan 1 is short or open.	Remove P2303 connector on the LCD Drive C.B.A. and check if the resistance between pin1 and pin2 of P2811 on the Thermistor 1 C.B.A. is 5kΩ～200kΩ. If NG, replace the Temperature Sensor (R2811) on the Thermistor 1 C.B.A. Still NG, replace the Projection Unit. Still NG, replace the Main C.B.A. **Note:** The Projection Unit includes LCD Drive C.B.A.
4)	It indicates when the temperature detected by the Temperature Sensor (R2811) on Thermistor 1 C.B.A. exceeds 55 °C (131 °F). 1. The surrounding temperature of the place of use may be too high. 2. The vents on the rear may be blocked.	1. Relocate the unit to a proper location. • Do not place in direct sunlight and other sources of direct heat. • Do not place the unit in humid or dusty location, or areas exposed to smokeor steam. (surrounding temperature should be between 0 °C (32 °F) and 40 °C (104 °F) and humidity should be between 20 % and 80 % (with no condensation).) • The vents are not blocked. It is recommended that a gap of at least 10 cm is left all around the unit even when it is placed inside a cabinet or between shelves. 2. Check if the fans are operating properly.
5)	1. The Lamp is not cooled off. 2. Thermal Fuse Unit (115˚C (239˚F)) is defective (open). 3. The Lamp is defective (crack). 4. The Lamp voltage becomes more over 130V or less than 30V. 5. The Ballast C.B.A. is defective. 6. The Main C.B.A. is defective.	1. Confirm that the Thermal Fuse Unit (115˚C(239˚F)) on the Lamp House is not open. 2. Wait until the Lamp is cooled off and try to turn the power back on. If same error LED indication continues, remove the Lamp and visually inspect it. If it is cracked, it must be replaced. If the Lamp is not cracked, replace the Ballast C.B.A. 3. If still NG, replace the Main C.B.A.
6)	The Lamp is defective (short of the Lamp).	Replace the Lamp.
7)	Thermal fuse (F1302) 117 °C (243 °F) on the Ballast C.B.A. is open due to abnormal temperature rise.	Replace the Ballast C.B.A.
8)	The Ballast C.B.A. is defective.	If the Lamp does not light up after attempting turning on the power 2 or 3 times, replace the Ballast C.B.A.
9)	+33V line on the Main C.B.A. error.	1. Replace the Power C.B.A. 2. If still NG, replace the Main C.B.A. 3. If still NG, replace the Tuner C.B.A.
10)	+9V line on the Main C.B.A. error.	1. Replace the Power C.B.A. 2. If still NG, replace the Main C.B.A. 3. If still NG, replace the Rear Jack C.B.A. 4. If still NG, replace the Projection Unit.
11)	+5V line on the Main C.B.A. error.	1. Replace the Power C.B.A. 2. If still NG, replace the Main C.B.A. 3. If still NG, replace the Rear Jack C.B.A. 4. If still NG, replace the Tuner C.B.A. 5. If still NG, replace the Projection Unit.
12)	+3.3V line on the Main C.B.A. error.	1. Replace the Power C.B.A. 2. If still NG, replace the Main C.B.A.
13)	-5V line on the Main C.B.A. error.	1. Replace the Power C.B.A. 2. If still NG, replace the Main C.B.A.
14)	+6.5V line on the Main C.B.A. error.	1. Replace the Power C.B.A. 2. If still NG, replace the Main C.B.A.
15)	The temperature sensor (R2821) on the Thermistor 2 C.B.A. on the Lamp House is short or open.	Remove P2304 connector on the LCD Drive C.B.A. and check if the resistance between pin1 and pin2 of P2821 on the Thermistor 2 C.B.A. is 5kΩ～1MΩ. If NG, replace the Temperature Sensor (R2821) on the Thermistor 2 C.B.A. Still NG, replace the Projection Unit. Still NG, replace the Main C.B.A. **Note:** The Projection Unit includes LCD Drive C.B.A.
16)	It indicates when the temperature detected by the Temperature Sensor (R2821) on Thermistor 2 C.B.A. exceeds 85 °C (185 °F). 1. The surrounding temperature of the place of use may be too high. 2. The vents on the rear may be blocked.	1. Relocate the unit to a proper location. • Do not place in direct sunlight and other sources of direct heat. • Do not place the unit in humid or dusty location, or areas exposed to smokeor steam. (surrounding temperature should be between 0 °C (32 °F) and 40 °C (104 °F) and humidity should be between 20 % and 80 % (with no condensation).) • The vents are not blocked. It is recommended that a gap of at least 10 cm is left all around the unit even when it is placed inside a cabinet or between shelves. 2. Check if the fans are operating properly.
17)	Clogged air filter of the Fan Case Unit.	1. Cleaning the Air Filter on the Projection Unit. 2. If still NG, replace the Projection Unit. 3. If still NG, replace the Main C.B.A.
18)	1. The Digital Tuner Power is defective. 2. The DTV Tuner Unit is defective. 3. The Main C.B.A. is defective. 4. The Tuner C.B.A. is defective.	1. Replace the Digital Tuner Power C.B.A. 2. Replace the DTV Tuner Unit. 3. Replace the Main C.B.A. 4. Replace the Tuner C.B.A.

No picture or abnormal picture

ABNORMAL PICTURE:
- **No Color Picture (Black and White picture)**
- **Abnormal Color Picture**
- **No Synchronization Picture**
- **Dark Picture**

Check that there is no picture or abnormal picture on the screen from all input terminals.



Note:
Menu (OSD) is produced by the DTV Tuner Unit.

No sound from built-in both L-CH and R-CH Speakers

Check that there is an audio signal to the Audio Out Terminal from all input terminals.

- (All input are NG.) → Replace the Rear Jack C.B.A.
- (Only Audio1, 2, Component 1, 2, OR 3 input is NG.) → Replace the Rear Jack C.B.A.
- (Only Audio3 input is NG.) → Replace the Front Jack C.B.A. Still NG, replace the Rear Jack C.B.A.
- (Only Tuner input is NG.) → Replace the Tuner C.B.A. Still NG, replace the Rear Jack C.B.A.
- (Only RGB 1 input is NG.) → Replace the Main C.B.A.
- (Only RGB 2 input is NG.) → Replace the Front Jack C.B.A. Still NG, replace the Main C.B.A.
- (Only HDMI input is NG.) → Replace the Main C.B.A.

OK

Replace the Audio Amp C.B.A. Still NG, Replace the Rear Jack C.B.A. Still NG, Replace the Power C.B.A.

No sound from built-in L-CH Speaker only

Press "MENU" button on the remote and select "Audio" in MENU screen. Then press "OK."

Does the "BALANCE" screen becomes center position?

- NO → Set to the center position.
- YES

Replace the L-CH Speaker.

No sound from built-in R-CH Speaker only

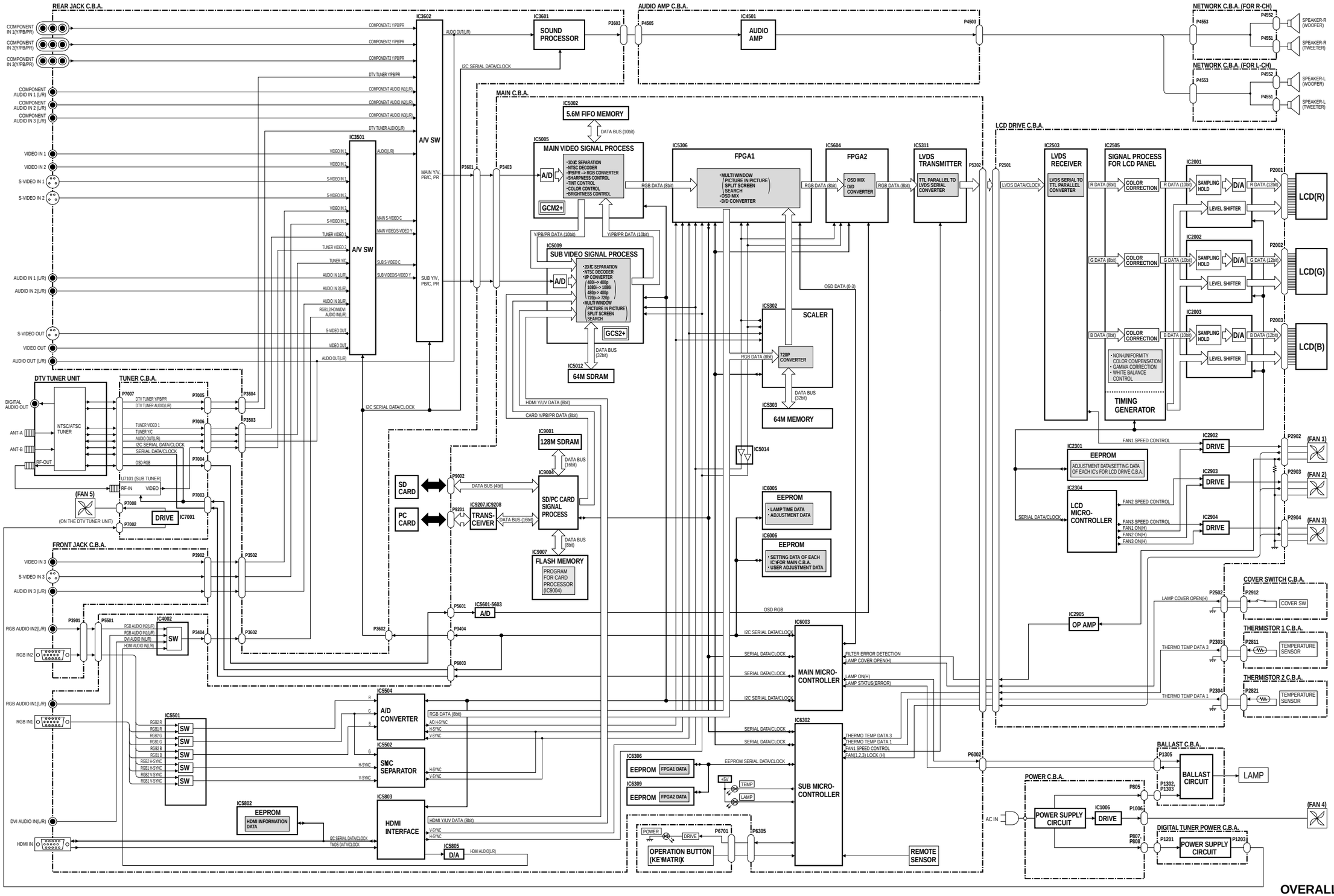
Press "MENU" button on the remote and select "Audio" in MENU screen. Then press "OK."

Does the "BALANCE" becomes center position?

- NO → Set to the center position.
- YES

Replace the R-CH Speaker.

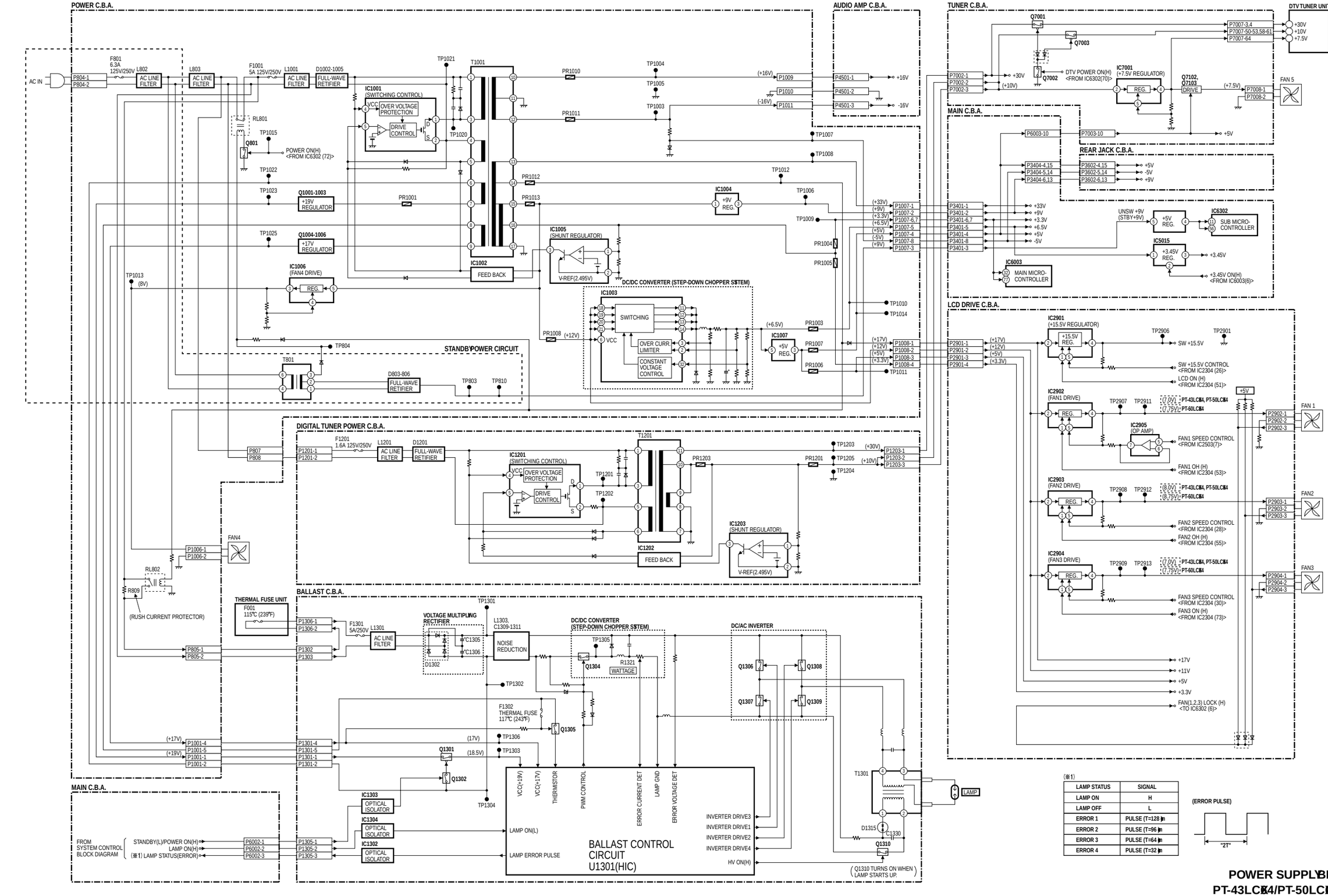
OVERALL BLOCK DIAGRAM



OVERALL BLOCK DIAGRAM

PT-43LCX4/PT-50LCX4/PT-60LCX4

POWER SUPPLY BLOCK DIAGRAM

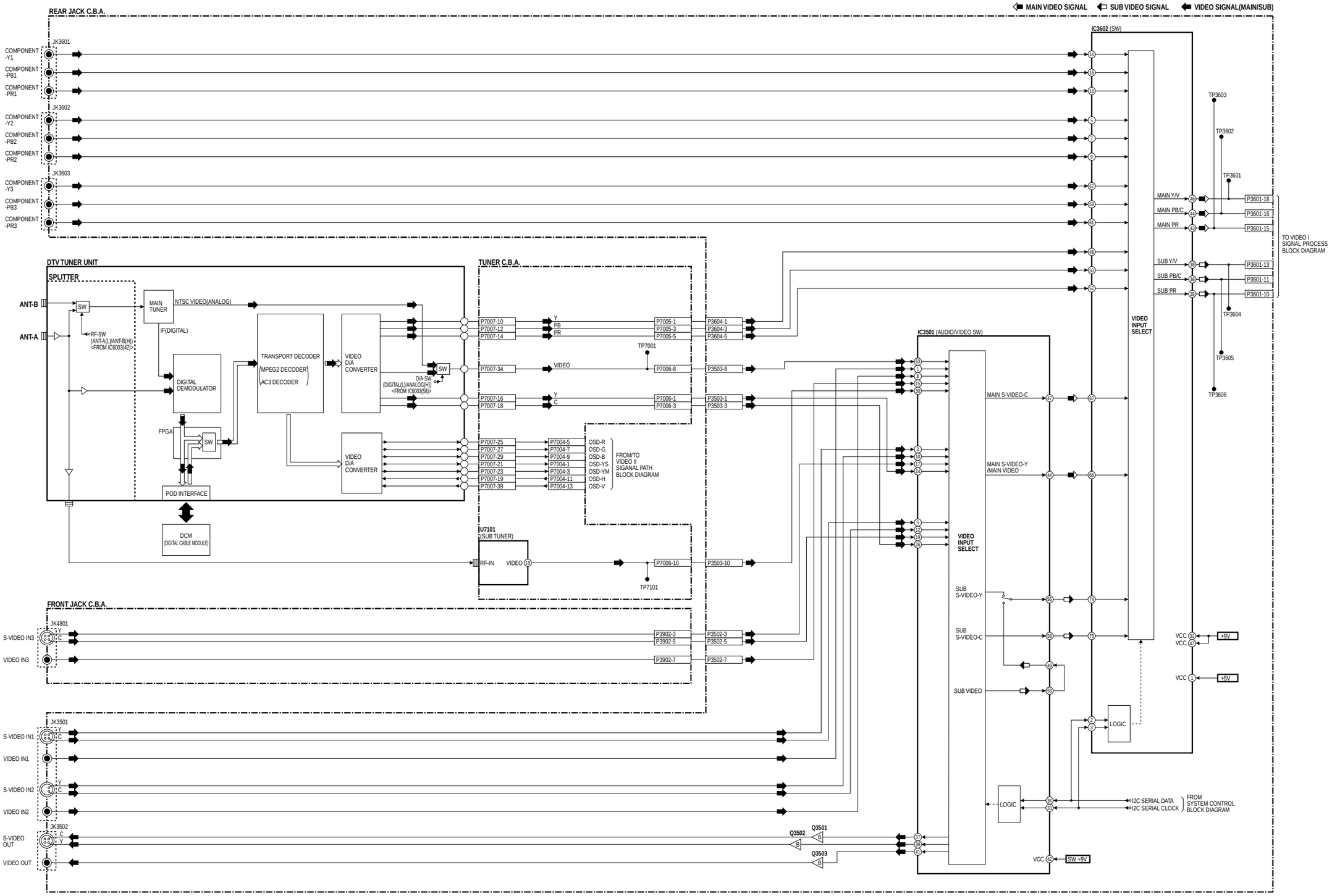


(※1)

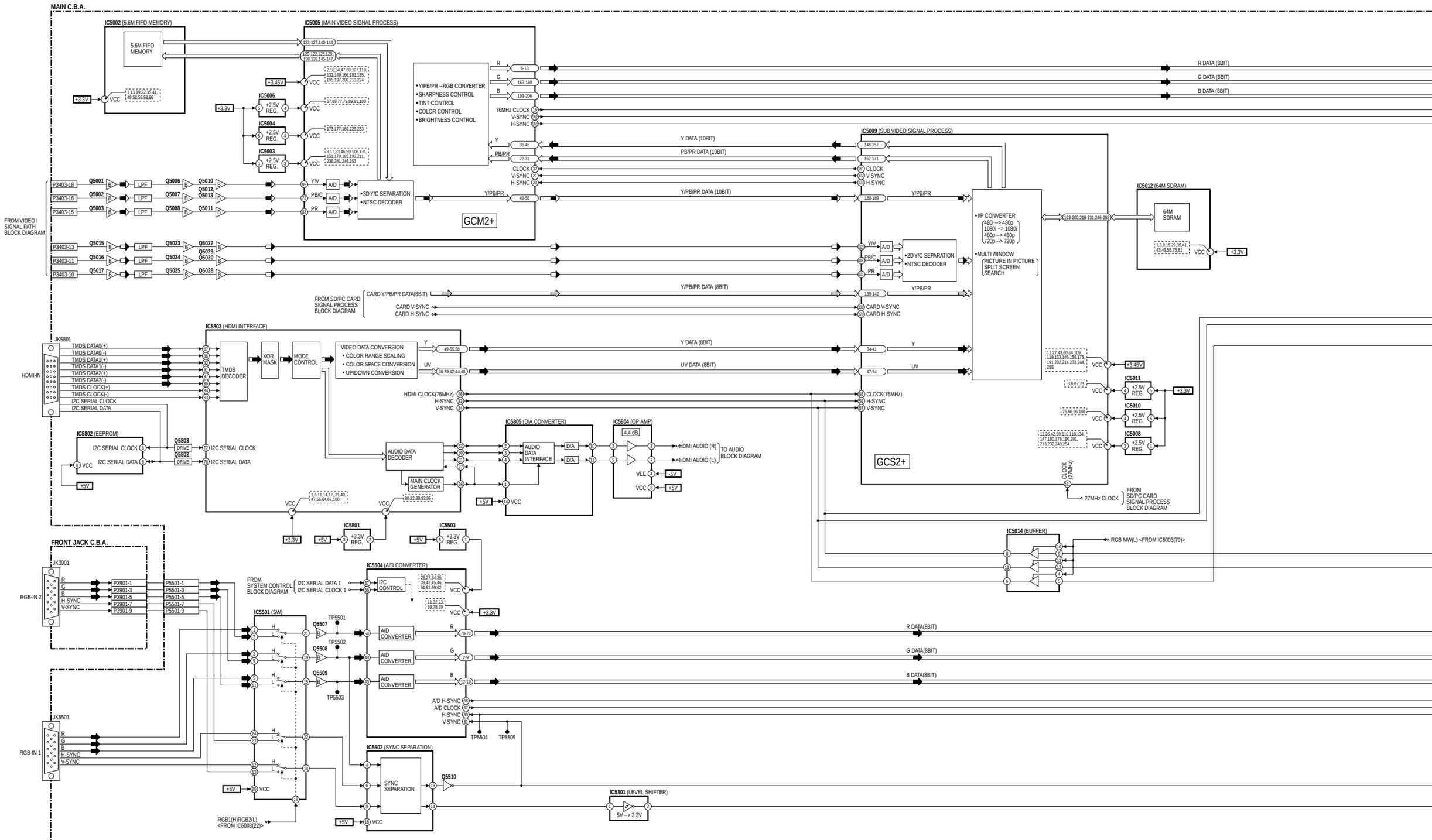
LAMP STATUS	SIGNAL
LAMP ON	H
LAMP OFF	L
ERROR 1	PULSE (T=128 μs)
ERROR 2	PULSE (T=96 μs)
ERROR 3	PULSE (T=64 μs)
ERROR 4	PULSE (T=32 μs)

(ERROR PULSE)

VIDEO SIGNAL PATH I BLOCK DIAGRAM

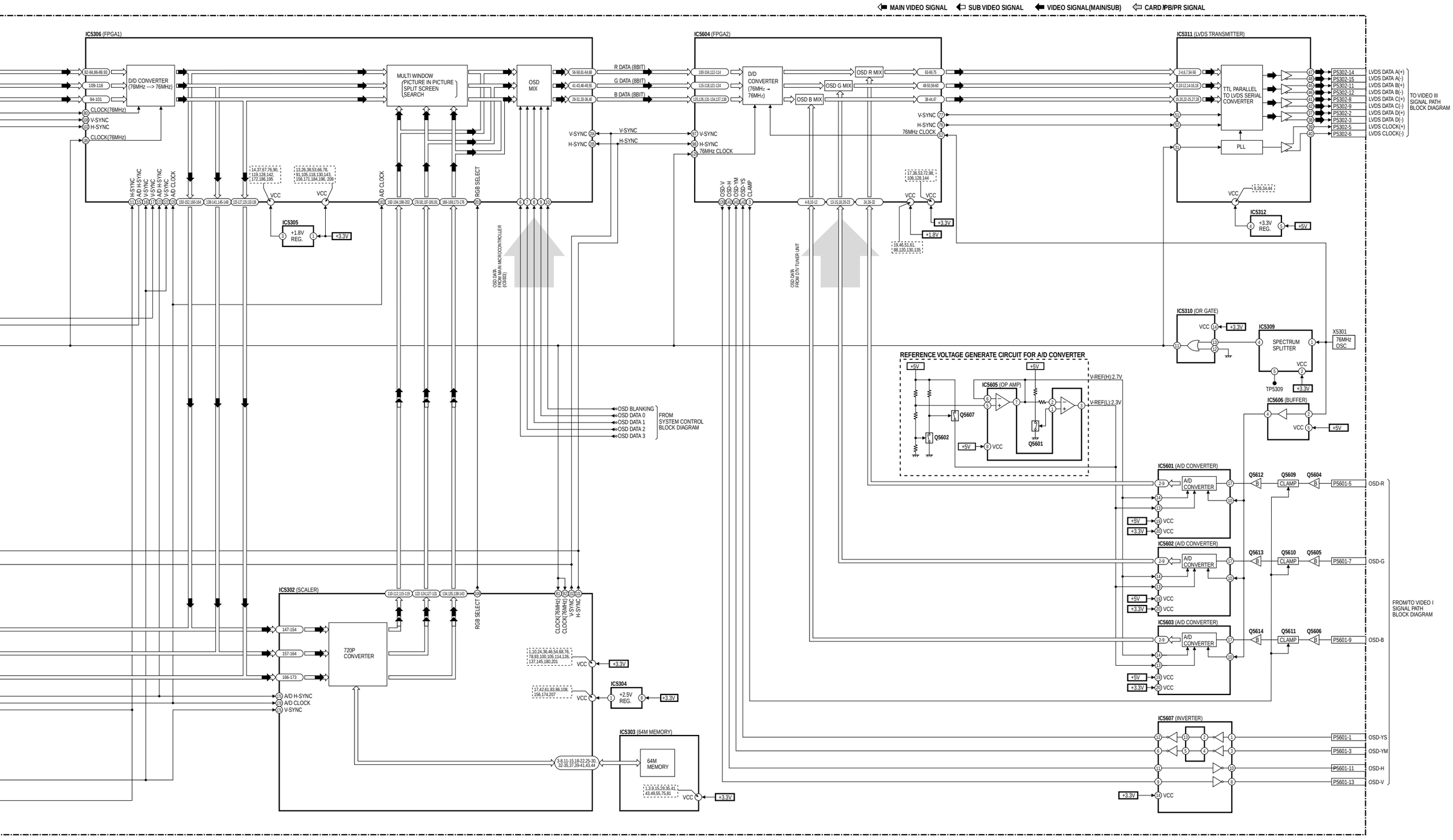


VIDEO SIGNAL PATH II BLOCK DIAGRAM (1/2)



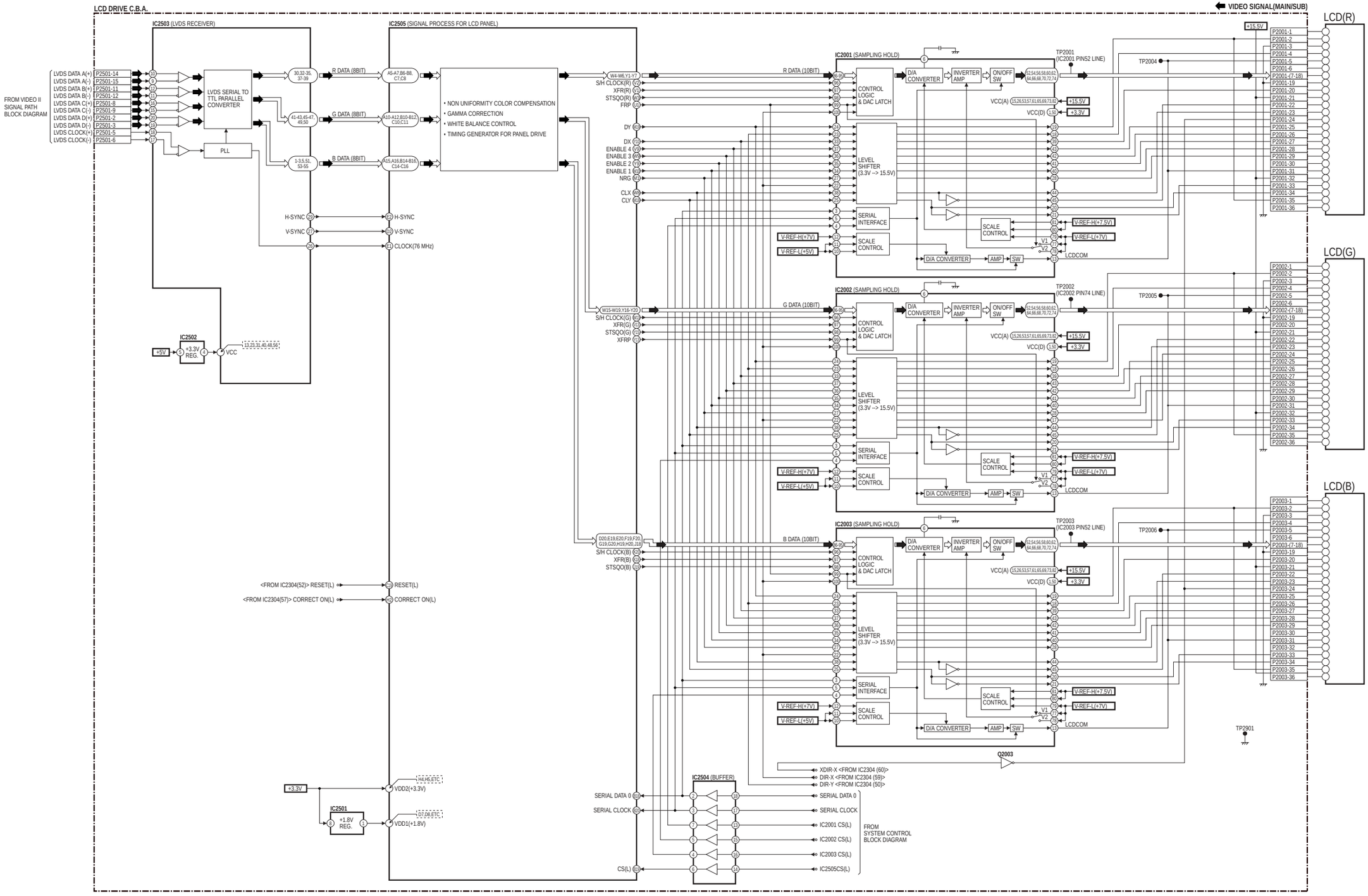
VIDEO SIGNAL PATH II BLOCK DIAGRAM (1/2)
PT-43LCX4/PT-50LCX4/PT-60LCX4

VIDEO SIGNAL PATH II BLOCK DIAGRAM (2/2)

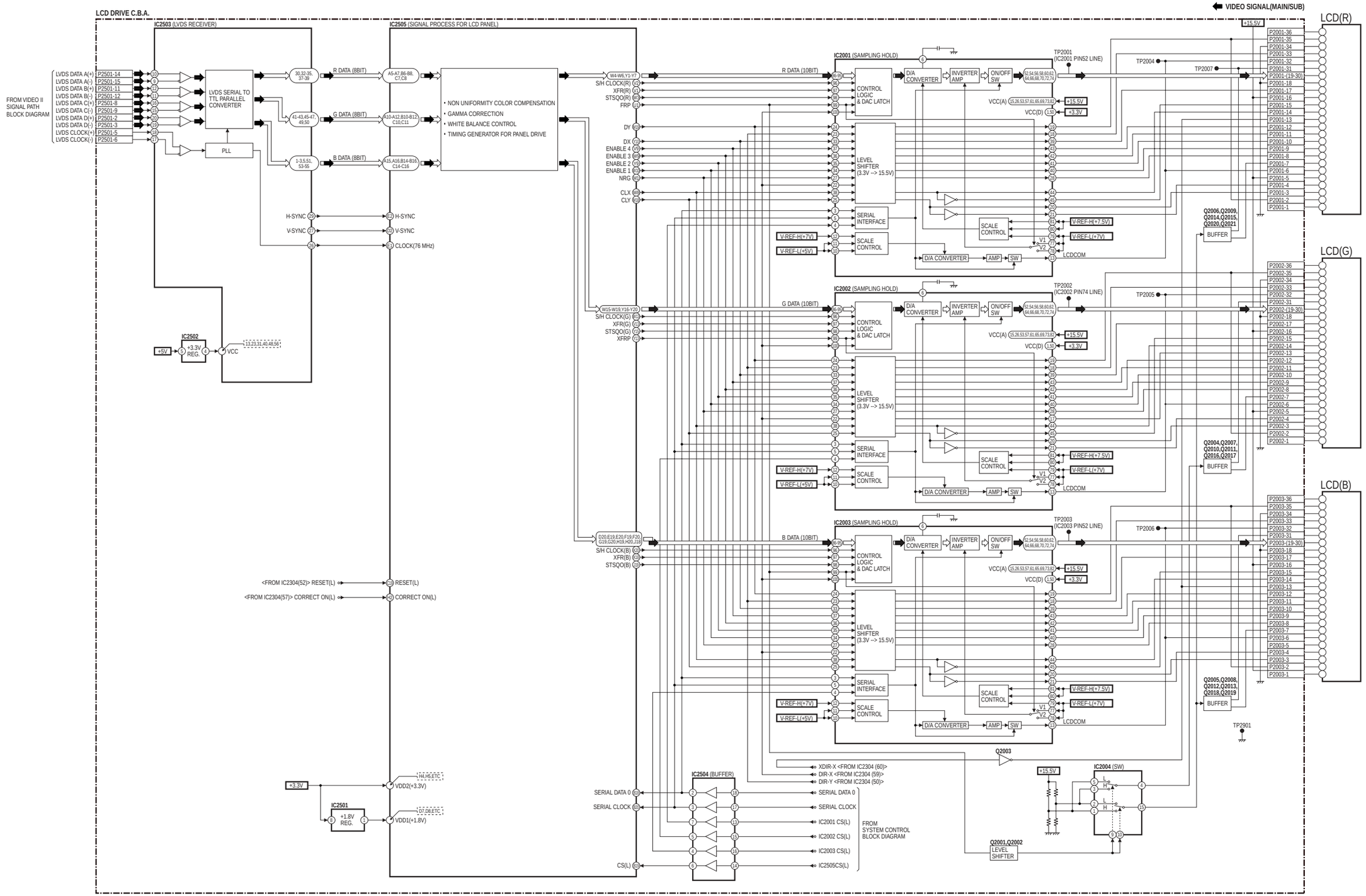


VIDEO SIGNAL PATH II BLOCK DIAGRAM (2/2)
PT-43LCX64/PT-50LCX64/PT-60LCX64

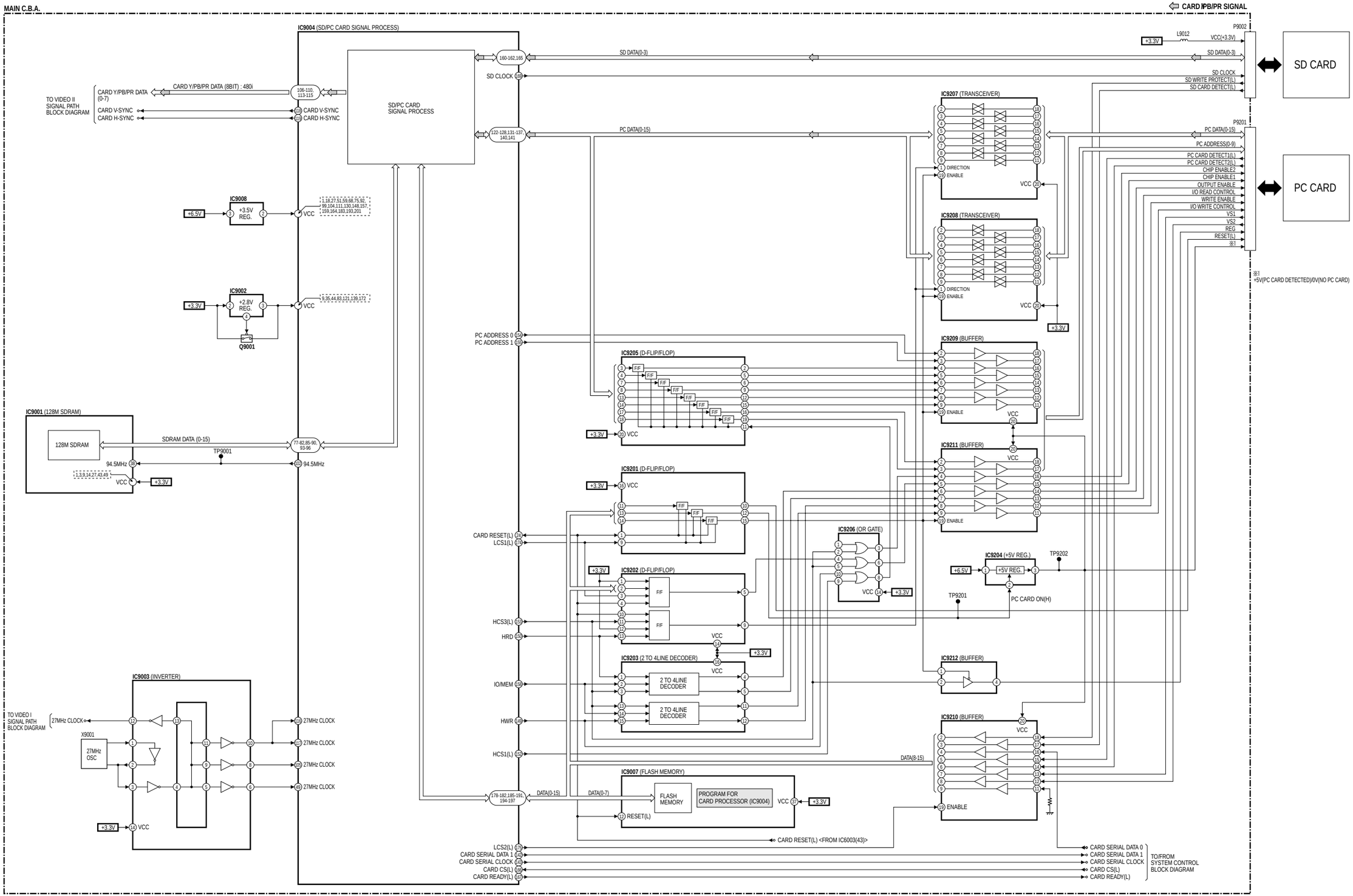
VIDEO SIGNAL PATH III BLOCK DIAGRAM (MODEL PT-43LCX4 / PT-50LCX5)



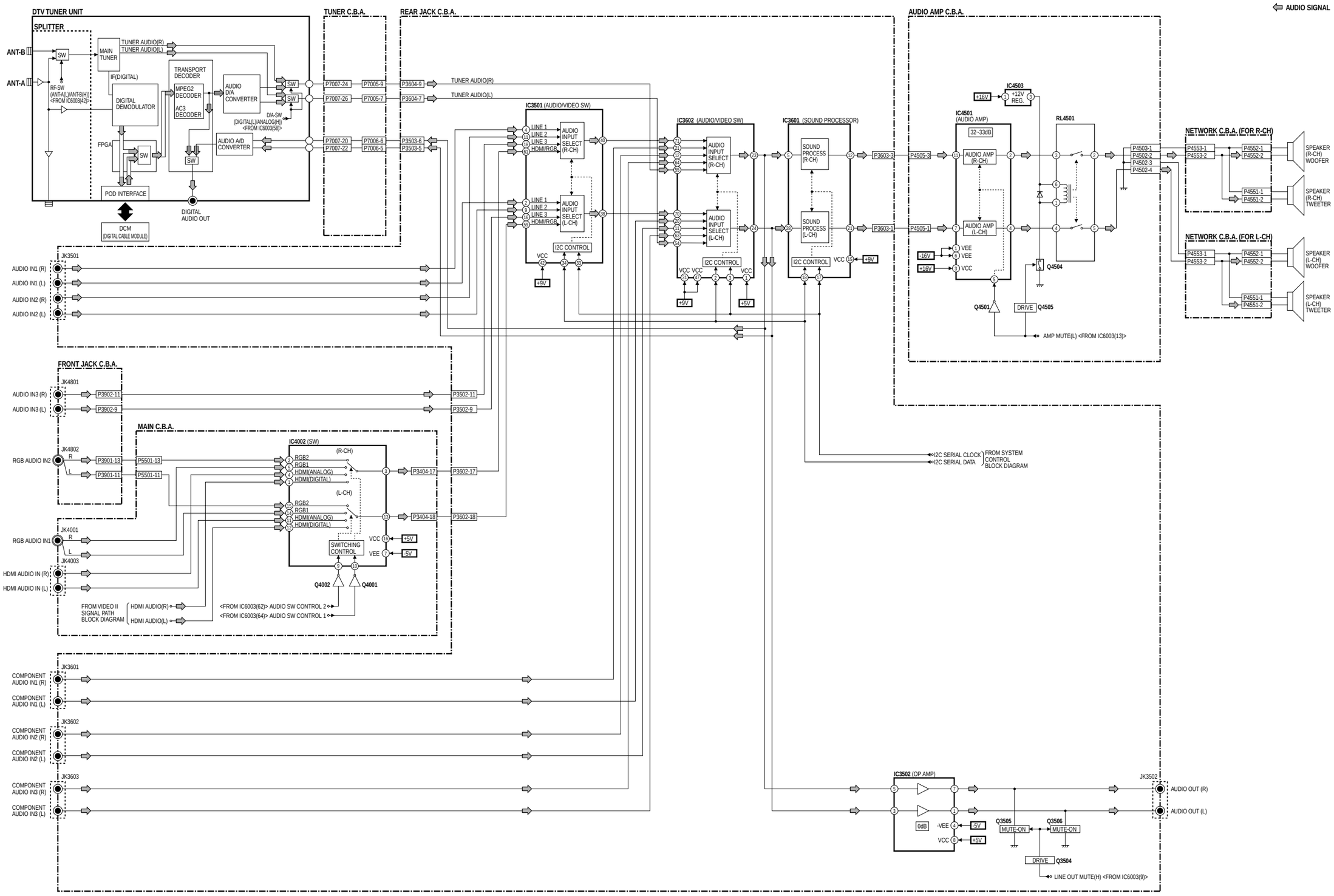
VIDEO SIGNAL PATH III BLOCK DIAGRAM (MPT-60LCX4)



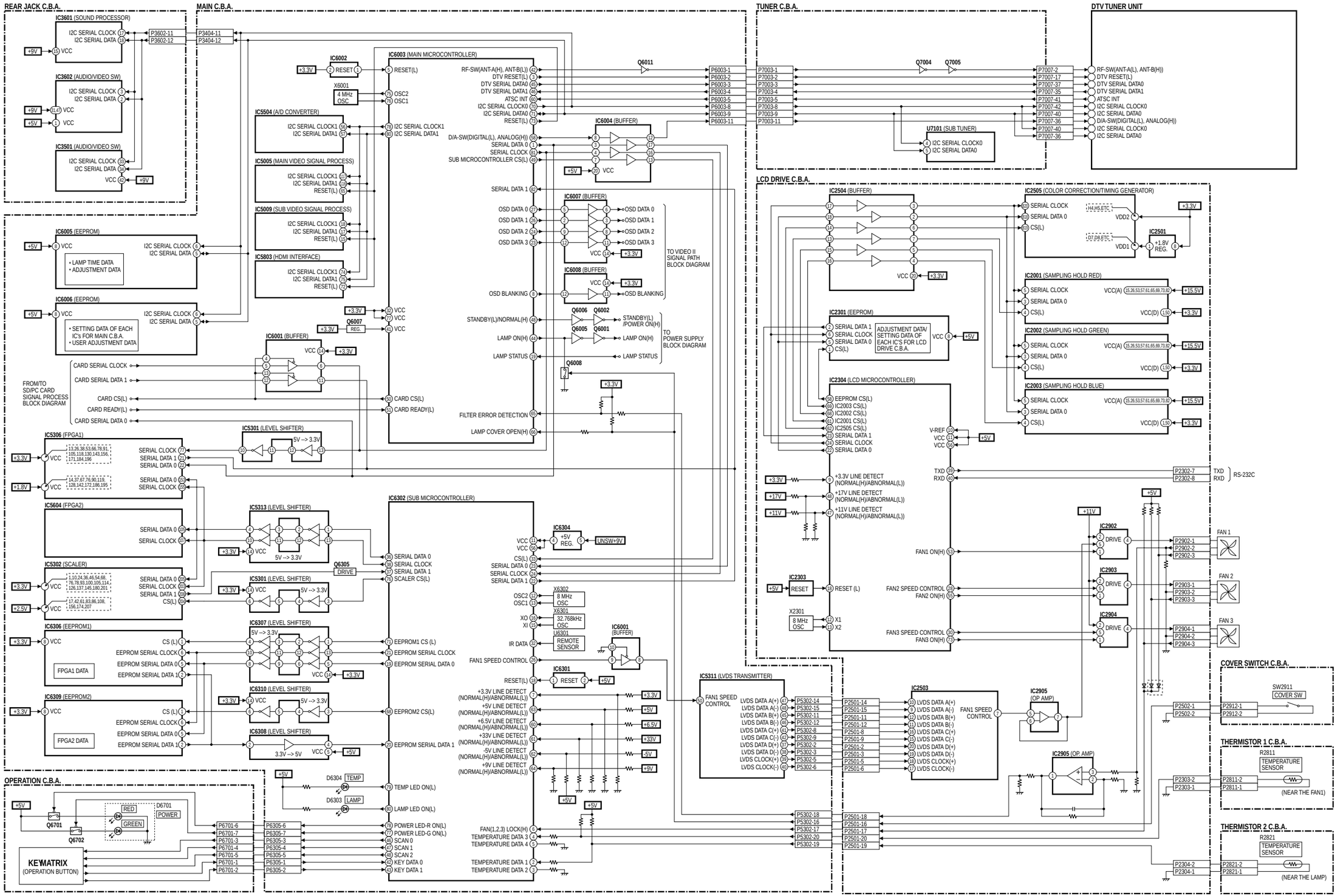
SD/PC CARD SIGNAL PROCESS BLOCK DIAGRAM



AUDIO SIGNAL PATH BLOCK DIAGRAM

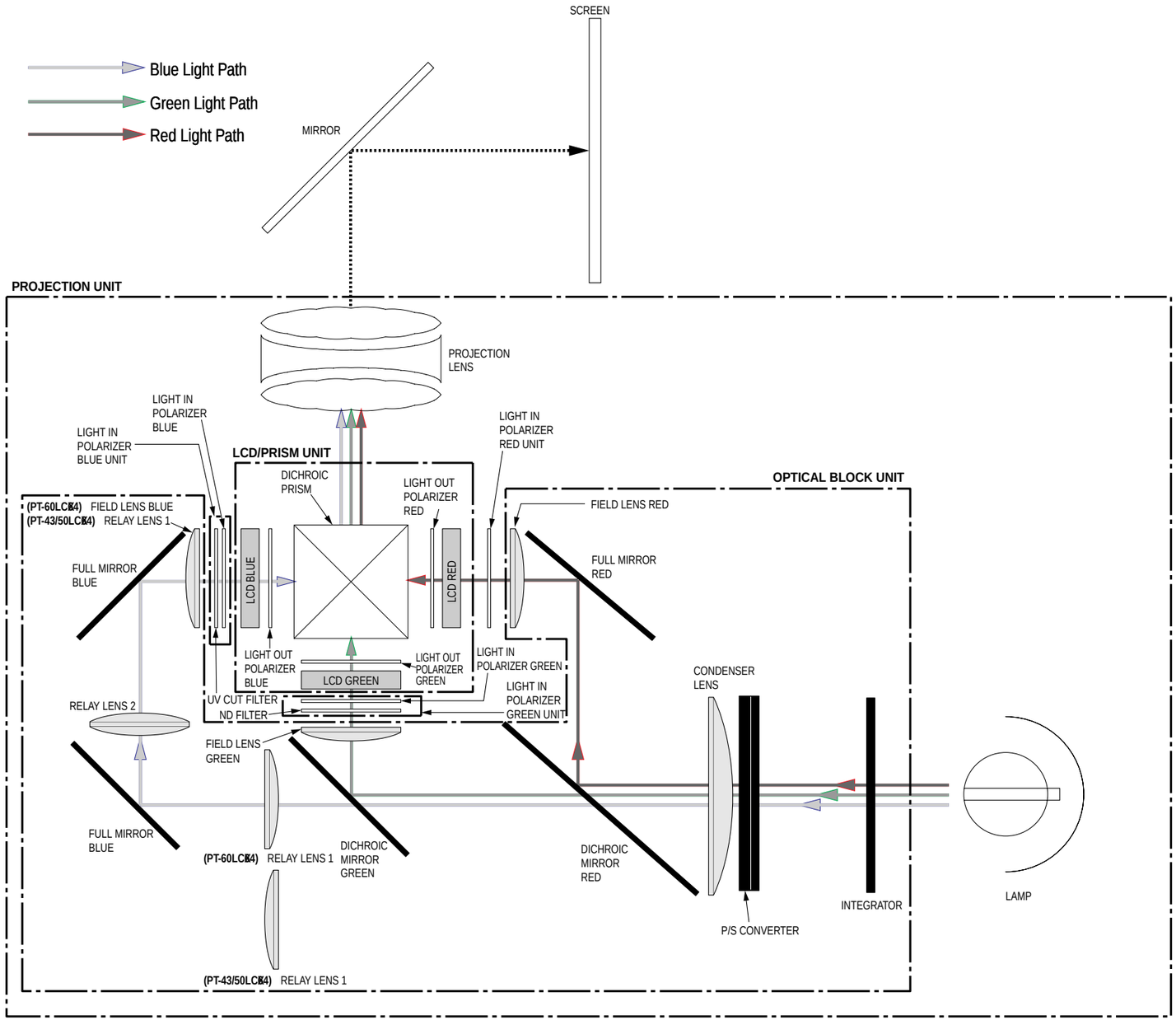


SYSTEM CONTROL BLOCK DIAGRAM



SYSTEM CONTROL BLOCK DIAGRAM
PT-43LCX4/PT-50LCX4/PT-60LCX4

OPTICAL BLOCK DIAGRAM



11 EXPLODED VIEWS

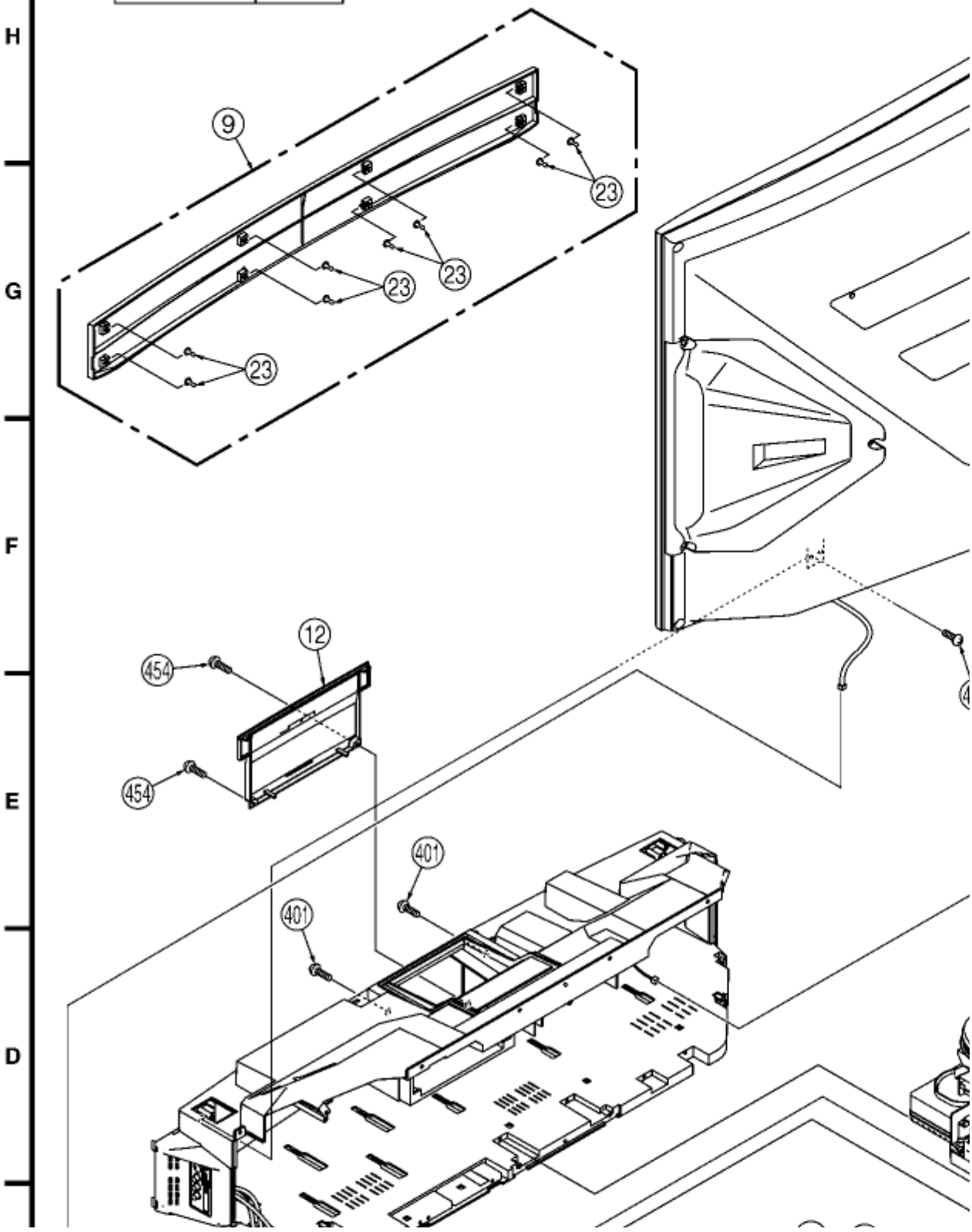
TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

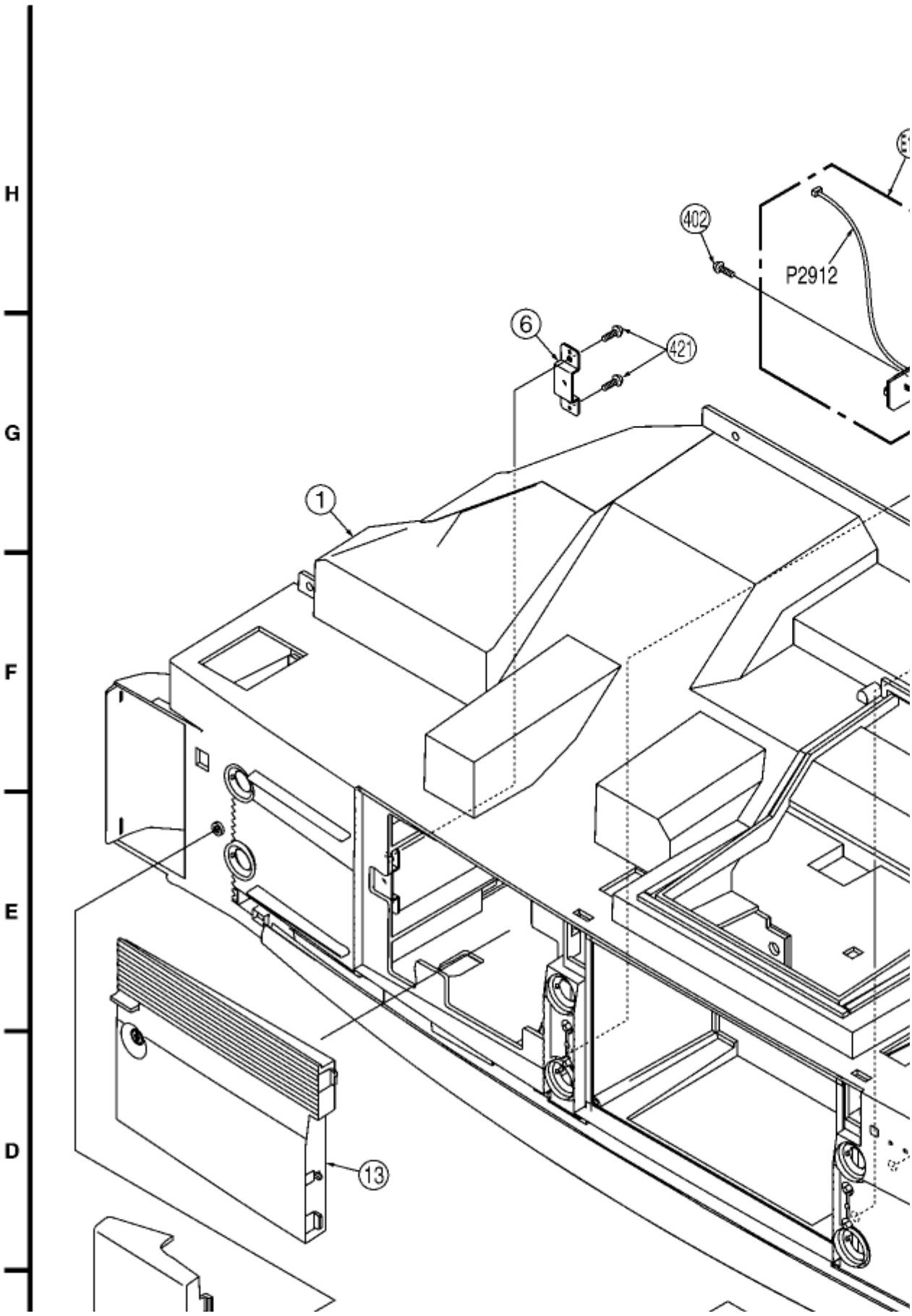
❶ MAIN PARTS SECTION

COMPARISON CHART
OF MODELS & MARKS

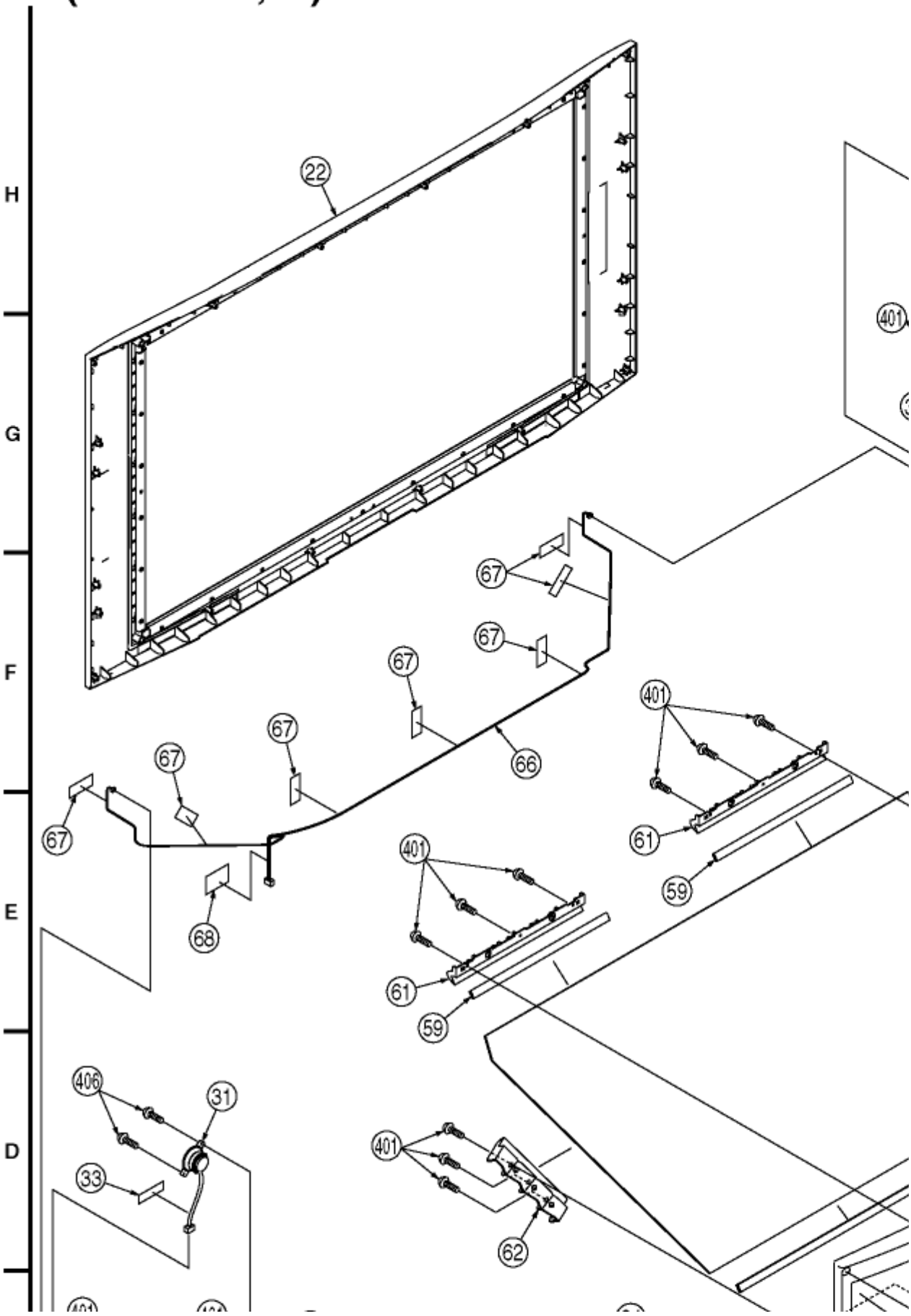
MODEL	MARK
PT-43LCX64	A
PT-50LCX64	B
PT-60LCX64	C



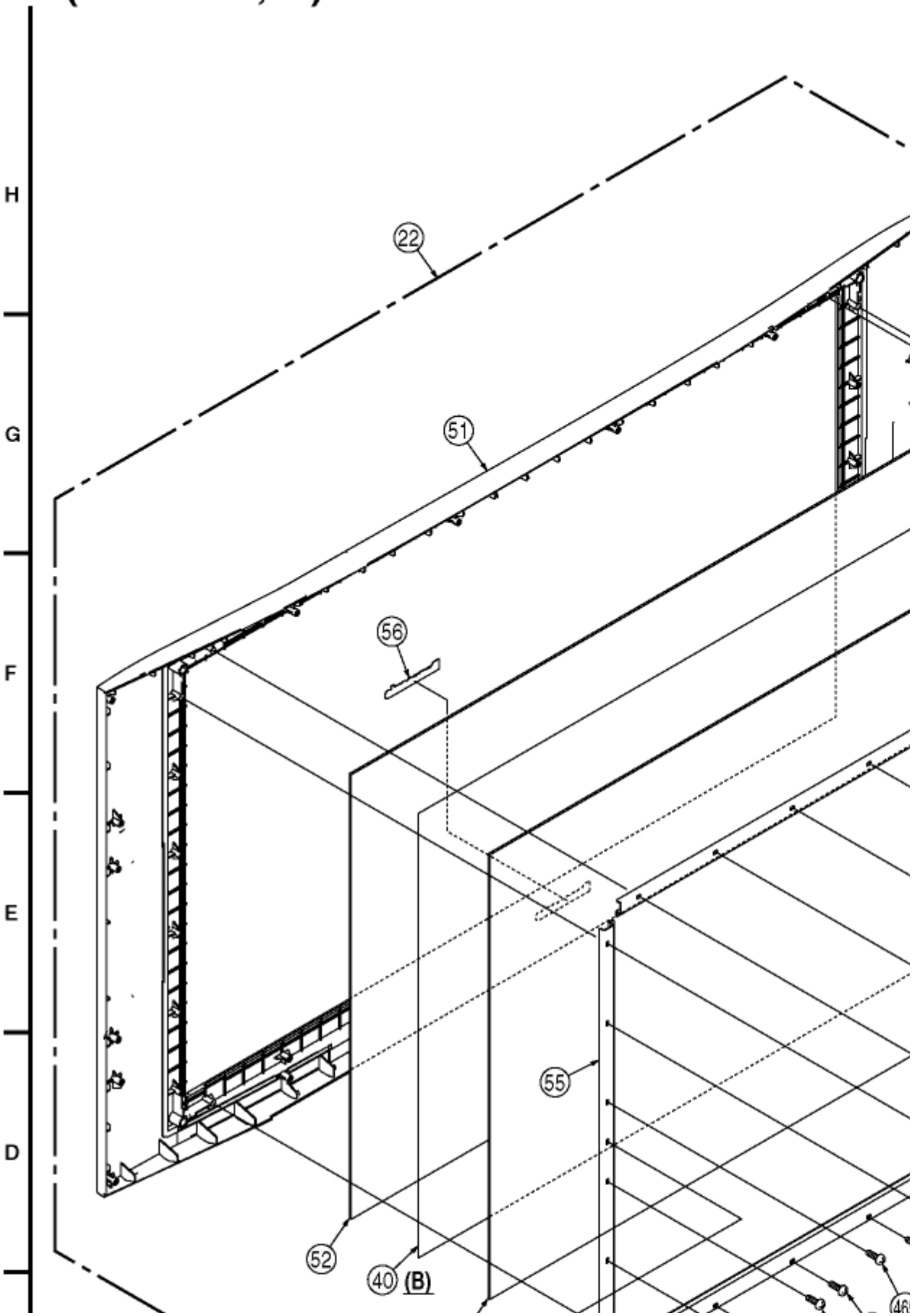
❷ FRONT AND BASE SECTION



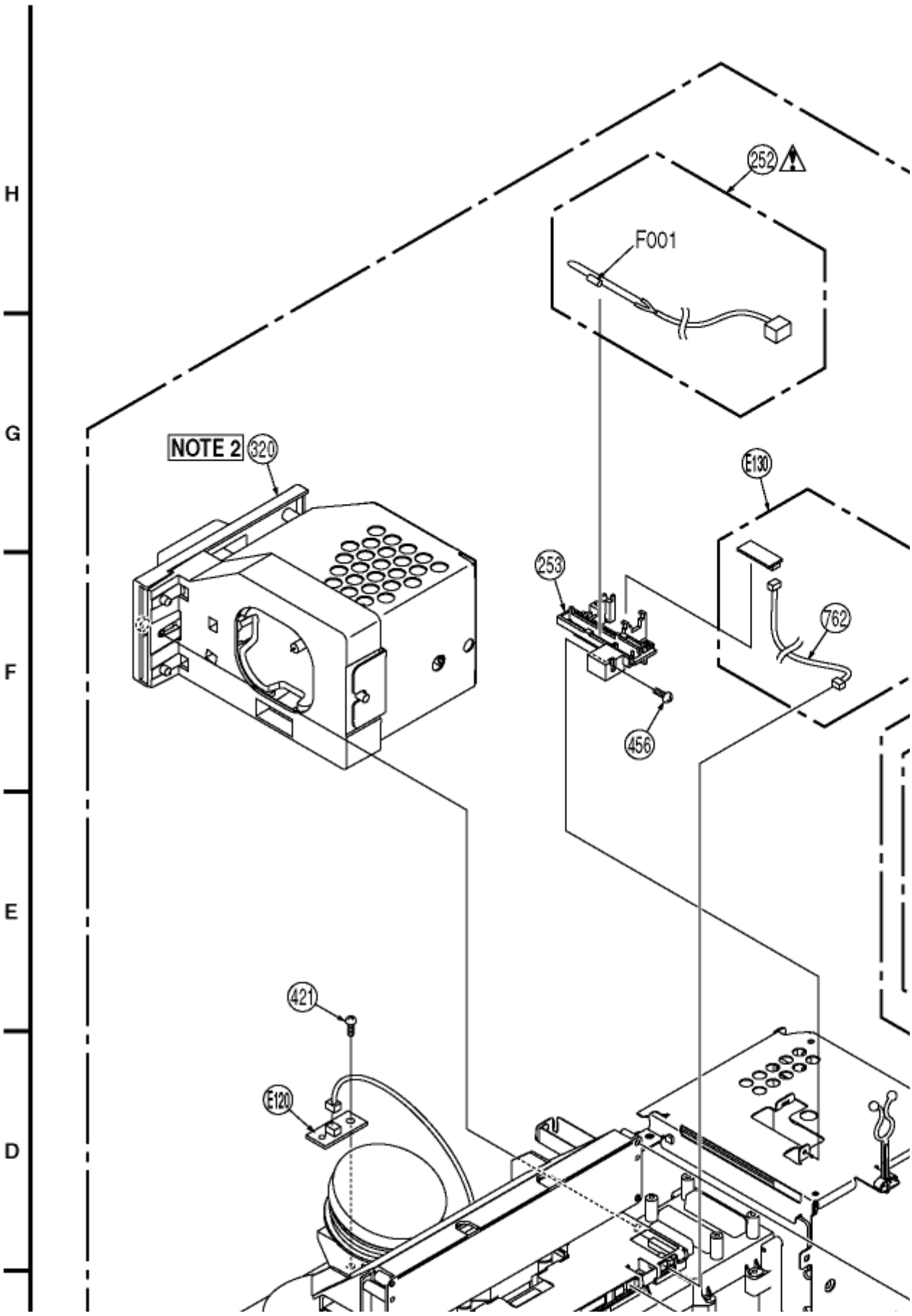
❸ 43/50 INCH DISPLAY SECTION (Model: A, B)



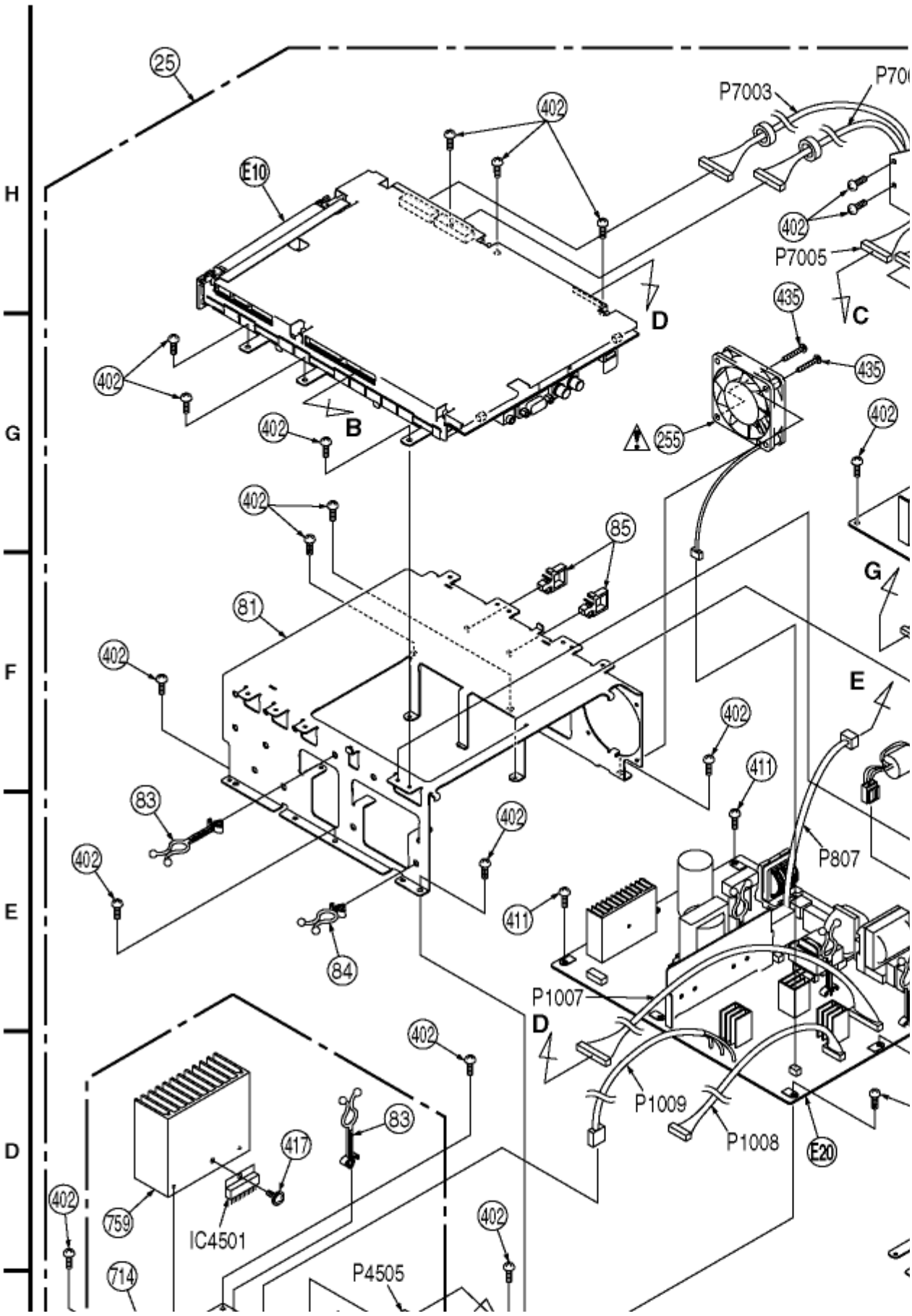
❹ 43/50 INCH SCREEN SECTION (Model: A, B)



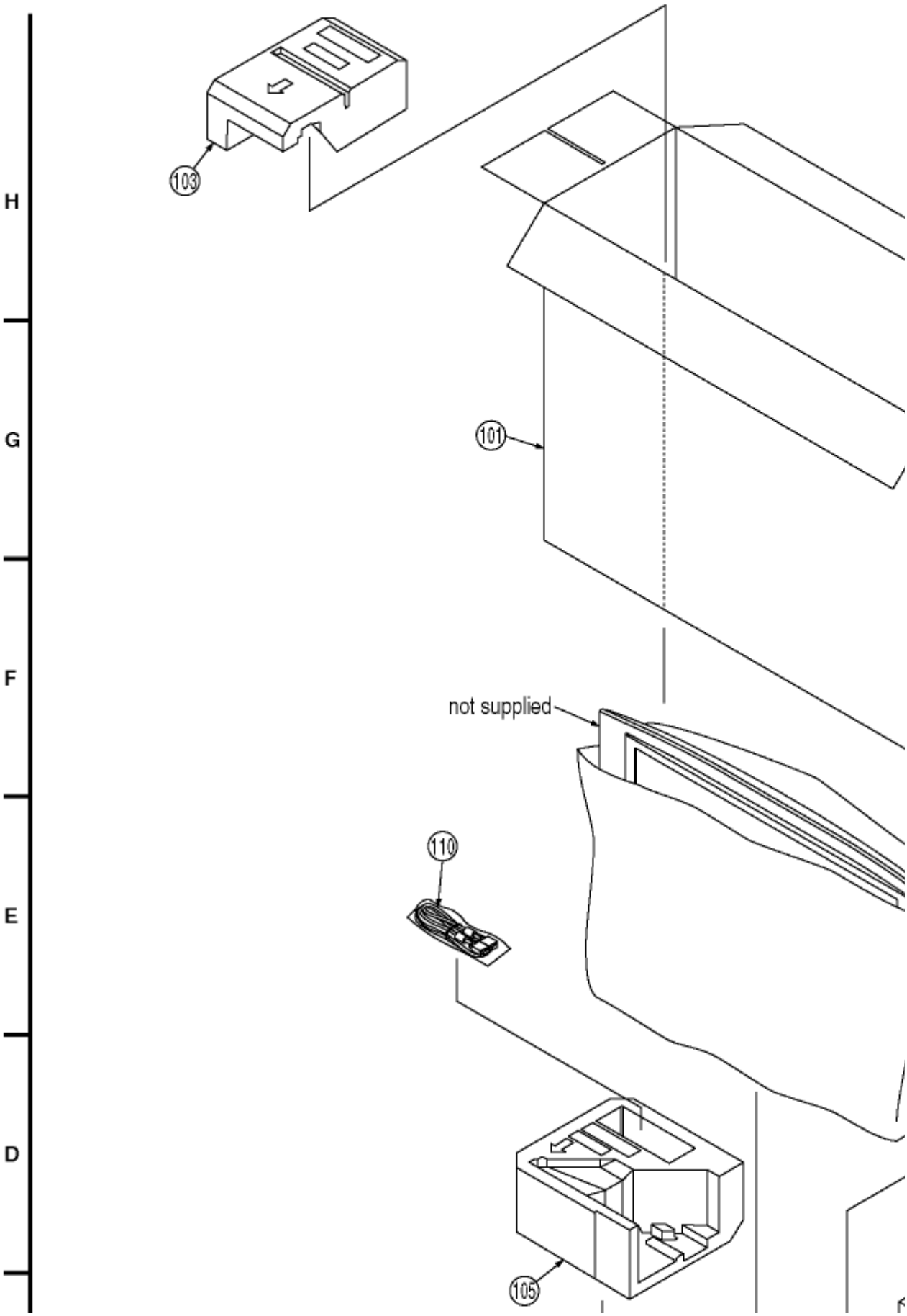
❺ PROJECTION SECTION



❻ TV AND TUNER SECTION



❼ PACKING PARTS AND ACCESSORIES SE



12.1.1 General Notes

TOP PREVIOUS NEXT

1. Use only original replacement parts:

   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.

2. IMPORTANT SAFETY NOTICE

   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

3. SPECIAL NOTE

   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

6. Definition of Parts supplier:

   A. Parts with mark "MKE" in the Remarks column are supplied from MKE.

   B. Parts without mark in the Remarks column are supplied from MKA.

7. Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.

8. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.

TOP PREVIOUS NEXT

12.1.2 Main Parts Replacement Notes

TOP PREVIOUS NEXT

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.

2. Abbreviation

   RTL: Retention Time Limited

   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

3. After replacing the Projection Unit (Ref. No. 21), be sure to perform "ADJUSTMENT of the Projection Unit." Refer to "WHEN REINSTALLING THE PROJECTION UNIT INTO THE UNIT AT THE USER´S LOCATION"; in ADJUSTMENT PROCEDURES 1.

4. The Infrared Remote Control Unit (Ref. No. 109) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit.

TOP PREVIOUS NEXT

12.1.3 Optional Accessory Replacement Notes

1. When servicing TV Stand (TY-43LC14C/TY-50LC14C/TY-60LC14C), refer to the Service Manual for Model No. PT-43LC14/PT-50LC14/PT-60LC14, Order No. MKE0406850C1.

12.1.4 Electrical Replacement Notes

1. Unless otherwise specified;

   All resistors are in Ω, K = 1,000 Ω, M = 1,000 kΩ.

2. Abbreviation

   - RTL:

     Retention Time Limited

     This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

   - NR:

     Non Repairable Board Ass´y

   - MGF CHIP:

     Metal Glaze Film Chip

   - C CHIP:

     Ceramic Chip

   - COMPLX CMP:

     Complex Component

   - W FLMPRF:

     Wirewound Flameproof

   - C.B.A.:

     Circuit Board Assembly

   - P.C.B.:

     Printed Circuit Board

   - E.S.D.:

     Electrostatically Sensitive Devices

3. When replacing 0 Ω resistor, a wire can be substituted for it.

4. Since SUB TUNER,UHF/VHF (Ref. No. 757) has already been pre-adjusted at the factory, do

not try to adjust them. The replacement parts for them are available as a complete assembly unit only.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PT-43LCX64	A
PT-50LCX64	B
PT-60LCX64	C

TOP PREVIOUS NEXT

12.2 MECHANICAL REPLACEMENT PARTS LIST

TOP PREVIOUS NEXT

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PT-43LCX64	A
PT-50LCX64	B
PT-60LCX64	C

Definition of Parts supplier:

1. Parts with mark "MKE" in the Remarks column are supplied from MKE.
2. Parts without mark in the Remarks column are supplied from MKA.

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	LSYK1384	BASE BODY UNIT (A,B)	2
1	LSYK1406	BASE BODY UNIT (C)	2
2	LSXY0507	EXAUST FAN UNIT	5
3	LSXA0607	TOP DUCT 3 UNIT	5
4	LSQL1662	CAUTION LABEL	1
5	LSGL0390	INFRARED PIECE	2
6	LSMA0688	LAMP COVER FIX PLATE,STEEL	2
7	LSMA0697	DISPLAY SUPPORT PLATE R,STEEL	2
8	LSMA0696	DISPLAY SUPPORT PLATE L,STEEL	2
9	LSYK1477	FRONT COVER UNIT	1
10	LSKG0043	FRONT SIDE COVER L	2
11	LSYY0147	SD DOOR UNIT	1
12	LSKF0573	OPTICAL COVER	1
13	LSYK1383	LAMP COVER UNIT	2
14	LSJA0467	CONNECTOR CABLE W/PLUG,	1
15	LSSC0648	GROUNDING PLATE A,STEEL	1
16	LSMA0686	REAR SUPORT PLATE,STEEL	1
17	LSGV0061	REAR COVER	1
18	STL450-3-1BK	CLAMPER	1
19	SLCSE2-500-3	CLAMPER	1
20	LSXA0478	CLAMPER UNIT	1
21	LSXA0571-HB	PROJECTION UNIT (A)	5 RTL MKE
21	LSXA0572-HB	PROJECTION UNIT (B)	5 RTL MKE
21	LSXA0573-HB	PROJECTION UNIT (C)	5 RTL MKE
22	LSYK1378	SCREEN UNIT (A)	3,4
22	LSYK1403	SCREEN UNIT (B)	3,4
22	LSYK1481	SCREEN UNIT (C)	3,4
23	TMM14414	STRIKE	1
24	FBL12G12L2CS	FAN 3	⚠5

25	LSXY0691	TV/TUNER UNIT	1,6 RTL
26	LSGV0073	60 REAR COVER (C)	1
31	EASG5PH519A2	TWEETER	3
32	EASG10P581A2	TWEETER	3
33	LSMF0290	SPACER	3
34	LSGQ0088	SPEAKER BOX FRONT	3
35	LSGQ0089	SPEAKER BOX REAR	3
36	TMMJ058	SPEAKER RUBBER	3
38	LSGQ0109	SPACER (C)	4
39	LSGQ0110	SPACER (C)	4
40	LSMG0147	SCREEN SPACER (B)	4
41	LSKG0047	FRONT SIDE COVER R	2
42	LSXU0014	OPERATION BUTTON UNIT	2
44	LSJH0066	SIDE JACK HOLDER	2
51	LSGY0226	ESCUTCHEON (A)	4
51	LSGY0230	ESCUTCHEON (B)	4
51	LSGY0231	ESCUTCHEON (C)	4
52	LSGP0410	LENTICULAR SCREEN (A)	4
52	LSGP0365	LENTICULAR SCREEN (B)	4
52	LSGP0432	LENTICULAR SCREEN (C)	4
53	LSGP0411	FRESNEL LENS (A)	4
53	LSGP0431	FRESNEL LENS (B)	4
53	LSGP0433	FRESNEL LENS (C)	4
54	LSXA0567	SCREEN PLATE H UNIT,STEEL (A)	4
54	LSXA0548	SCREEN PLATE H UNIT,STEEL (B)	4
54	LSXA0541	SCREEN PLATE H UNIT,STEEL (C)	4
55	LSXA0568	SCREEN PLATE V UNIT,STEEL (A)	4
55	LSXA0549	SCREEN PLATE V UNIT,STEEL (B)	4
55	LSXA0542	SCREEN PLATE V UNIT,STEEL (C)	4
56	TBM2AA0071-1	PANASONIC BADGE	4
57	LSGV0085	BACK COVER (A)	3
57	LSGV0056	BACK COVER (B)	3
57	LSGV0091	BACK COVER (C)	3
58	LSDL0277	MIRROR (A)	3
58	LSDL0278	MIRROR (B)	3
58	LSDL0247	MIRROR (C)	3
59	LSMF0280	SPACER (A,C)	3
59	LSMF0337	SPACER (B)	3
60	LSMF0320	SPACER (A)	3
60	LSMF0338	SPACER (B)	3
60	LSMF0311	SPACER (C)	3
61	LSGQ0092	MIRROR HOLDER H	3
62	LSYF0541	MIRROR HOLDER V UNIT (A,B)	3
62	LSYF0543	MIRROR HOLDER V UNIT (C)	3
63	LSMA0700	BACK COVER PLATE,STEEL (B)	3
63	LSMA0715	BACKCOVER PLATE,STEEL (C)	3
64	LSMF0347	SPACER (A)	3
64	LSMF0288	SPACER (B,C)	3
65	LSMF0289	SPACER	3
66	LSJA0535	CONNECTOR CABLE W/PLUG (A)	3

66	LSJA0474	CONENCTOR CABLE W/PLUG (B)	3
66	LSJA0475	CONNECTOR CABLE W/PLUG (C)	3
67	LSMF0291	SPACER	3
68	LSMF0292	SPACER	3
69	TMM77409	PURSE LOCK CLAMPER	1
72	LSMA0755	TNR PCB FRAME	6
73	LSJA0456-FE	AC CORD W/PLUG	6 ⚠
74	LSJH0068	REAR JACK HOLDER	6
75	LSSC0672	EARTH PLATE C	6
76	LSMP0440	PCB FRAME	6
77	LSMA0693	PCB FRAME PLATE LEFT,STEEL	6
78	LSMA0694	PCB FRAME PLATE RIGHT,STEEL	6
79	LSMA0695	PCB FRAME PLATE CENTER,STEEL	6
80	LSSC0646	BOTTOM SHIELD PLATE	6
81	LSMA0690	MAIN PCB FRAME	6
83	TMM5439-1	CLAMPER	6
84	TMM7464-1	CLAMPER	6
85	TMM6425-1	CLAMPER	6
90	CA-DAB2J	DTV TUNER UNIT	6
91	LSMF0302	SPACER	6
92	LSMF0303	SPACER	6
93	LSMF0304	SPACER	6
94	LSMF0305	SPACER	6
95	LSMZ0371	HDMI SHEET	6
101	LSPG1860	CARTON BOX (A)	7
101	LSPG1861	CARTON BOX (B)	7
101	LSPG1862	CARTON BOX (C)	7
102	LSPG1741	CARTON BOX BOTTOM (A)	7
102	LSPG1548	CARTON BOX BOTTOM (B)	7
102	LSPG1605	CARTON BOX BOTTOM (C)	7
103	LSPN0476	CUSHION TOP LEFT,STYROFORM (A)	7
103	LSPN0496	CUSHION TOP LEFT,STYROFORM (B)	7
103	LSPN0418	CUSHION TOP LEFT,STYROFORM (C)	7
104	LSPN0477	CUSHION TOP RIGHT,STYROFORM (A)	7
104	LSPN0497	CUSHION TOP RIGHT,STYROFORM (B)	7
104	LSPN0419	CUSHION TOP RIGHT,STYROFORM (C)	7
105	LSPN0478	CUSHION BOTTOM LEFT,STYROFORM (A)	7
105	LSPN0498	CUSHION BOTTOM LEFT,STYROFORM (B)	7
105	LSPN0420	CUSHION BOTTOM LEFT,STYROFORM (C)	7
106	LSPN0479	CUSHION BOTTOM RIGHT,STYROFORM (A)	7
106	LSPN0499	CUSHION BOTTOM RIGHT,STYROFORM (B)	7
106	LSPN0421	CUSHION BOTTOM RIGHT,STYROFORM (C)	7
107	LSPG1742	INSIDE CARTON (A)	7
107	LSPG1549	INSIDE CARTON (B)	7
107	LSPG1604	INSIDE CARTON (C)	7
108	LSPF0161	BAG,POLYETHYLENE (A)	7
108	LSPF0111	BAG,POLYETHYLENE (B,C)	7
109	EUR7627Z10	INFRARED REMOTE CONTROL UNIT	7
110	LSJA0239	VGA CABLE W/PLUG	7
111	LSQF0857	FAN BAG	7

113	LSPN0430	FRONT CUSHION (B)	7
252	LSJA0464	THERMAL FUSE UNIT	5 ⚠ MKE
253	LSMP0420	SENSOR HOLDER	5 MKE
255	L6FAKCDH0007	FAN	6 ⚠
330	LSMF0269	TOP DUCT 3 SPONGE 1	5
331	LSMF0270	TOP DUCT 3 SPONGE 2	5
332	LSMF0271	TOP DUCT 3 SPONGE 3	5
333	LSMF0272	TOP DUCT 3 SPONGE 4	5
401	XTV4+16A	TAPPING SCREW,STEEL	1,2,3
402	XTV3+8J	TAPPING SCREW,STEEL	1,2,5,6
406	XTV3+10J	TAPPING SCREW,SCREW	3
411	XYE3+FF8	SCREW W/WASHER,STEEL	6
417	XYN3+K10	SCREW W/WASHER,STEEL	6
421	XTV3+8G	TAPPING SCREW,STEEL	2,5
435	XTV3+20J	TAPPING SCREW,STEEL	6
451	XTW3+8Q	SCREW,STEEL	1
452	XTV3+8F	TAPPING SCREW,STEEL	1
454	XTV4+16AFZ	TAPPING SCREW,STEEL	1,2
455	XTV3+12J	SCREW,STEEL	5
456	XTV3+6F	TAPPING SCREW,STEEL	5 MKE
464	XTV4+20A	TAPPING SCREW,STEEL (C)	1
465	XTV4+12A	TAPPING SCREW,STEEL	4
466	XTV3+10G	TAPPING SCREW,STEEL	6
477	LSHD0100	SCREW,STEEL	3
478	LSHD0099	SCREW,STEEL	3
714	VMTS0035	CUSHION,RUBBER	6
750	VZFS0006	CLAMPER	2
751	J0KA00000044	FILTER FOR EMI / EMC (CORES)	2
752	LSLQ0307	FERRITE CORE	2
759	LSSC0634	HEAT SINK	6
762	LSJA0533	CONNECTOR CABLE W/PLUG	5 MKE
E10	LSXY0693	MAIN C.B.A.	6 RTL
E20	LSEP3148A	POWER C.B.A.	6 RTL
E30	LSEB3131A	BALLAST C.B.A. NR	1
E40	LSEP3094A	FRONT JACK C.B.A.	2 RTL
E50	LSXY0523	REAR JACK C.B.A.	6 RTL
E60	LSEP3108A	TUNER C.B.A.	6 RTL
E70	LSEP3092A	AUDIO AMP C.B.A.	6 RTL
E80	LSEP3149A	OPERATION C.B.A.	2 RTL
E90	LSEP3097A	NETWORK C.B.A.	3 RTL
E100	LSEP3098A	COVER SWITCH C.B.A.	2 RTL
E120	LSEP3136A	THERMISTOR 1 C.B.A.	5 RTL MKE
E130	LSEP3137A	THERMISTOR 2 C.B.A.	5 RTL MKE
E140	LSEP3109A	DIGITAL TUNER POWER C.B.A.	6 RTL

12.3.1 LAMP UNIT

TOP PREVIOUS NEXT

Ref. No.2	Part No.	Part Name & Description	Remarks
320	TY-LA1000	LAMP UNIT	5 NOTE

NOTE:

The Lamp Unit (TY-LA1000) is not supplied as a replacement part. It is sold separately. To purchase a replacement, call the Panasonic accessory department.

TOP PREVIOUS NEXT

12.4 ELECTRICAL REPLACEMENT PARTS LIST

TOP PREVIOUS NEXT

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PT-43LCX64	A
PT-50LCX64	B
PT-60LCX64	C

Definition of Parts supplier:

1. Parts with mark "MKE" in the Remarks column are supplied from MKE.
2. Parts without mark in the Remarks column are supplied from MKA.

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSXY0693	MAIN C.B.A.	E.S.D. RTL
E20	LSEP3148A	POWER C.B.A.	E.S.D. RTL
E30	LSEB3131A	BALLAST C.B.A. NR	
E40	LSEP3094A	FRONT JACK C.B.A.	RTL
E50	LSXY0523	REAR JACK C.B.A.	E.S.D. RTL
E60	LSEP3108A	TUNER C.B.A.	RTL
E70	LSEP3092A	AUDIO AMP C.B.A.	RTL
E80	LSEP3149A	OPERATION C.B.A.	RTL
E90	LSEP3097A	NETWORK C.B.A.	RTL
E100	LSEP3098A	COVER SWITCH C.B.A.	RTL
E120	LSEP3136A	THERMISTOR 1 C.B.A.	RTL MKE
E130	LSEP3137A	THERMISTOR 2 C.B.A.	RTL MKE
E140	LSEP3109A	DIGITAL TUNER POWER C.B.A.	RTL

TOP PREVIOUS NEXT

12.4.1 FRONT JACK C.B.A.

TOP PREVIOUS NEXT

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D3901	B0BD6R200002	DIODE ZENER 6.2V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3901	ERJ6ENF75R0V	MGF CHIP 1/10W 75	
R3902	ERJ6ENF75R0V	MGF CHIP 1/10W 75	
R3903	ERJ6ENF75R0V	MGF CHIP 1/10W 75	
R3904	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3905	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3906	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3907	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3908	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3911	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3912	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3913	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3914	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3915	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3916	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3917	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R3918	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4801	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4802	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4803	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4804	ERJ6GEYJ101V	MGF CHIP 1/10W 100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3901	LSJA0469	CONNECTOR CABLE W/PLUG,5V	
P3902	LSJA0470	CONNECTOR CABLE W/PLUG,5V	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3901	K1FB115A0015	D-SUB MINI JACK SOCKET	
JK4801	K1U412A00008	S-JACK SOCKET	
JK4802	K2HC103A0017	EARPHONE JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
750	VZFS0006	CLAMPER	
751	J0KA00000044	FILTER FOR EMI / EMC (CORES)	
752	LSLQ0307	FERRITE CORE	

12.4.2 AUDIO AMP C.B.A.

TOP PREVIOUS NEXT

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC4501	C1AA00000660	IC, LINEAR	
IC4503	C0CAAKE00013	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q4501	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q4501	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4501	B1ABCF000106	TRANSISTOR SI NPN CHIP	
Q4504	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q4504	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4504	B1ABCF000106	TRANSISTOR SI NPN CHIP	
Q4505	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q4505	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q4505	B1ABCF000106	TRANSISTOR SI NPN CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4501	MAZ40510MF	DIODE ZENER 5.1V	
D4501	HZS5C2TD	DIODE ZENER 5.1V	
D4501	HZS5C3TD	DIODE ZENER 5.1V	
D4504	MA2C16700E	DIODE SI	
D4504	B0AAEL000001	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4501	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4502	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4503	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4504	ERX1SJ4R7P	METAL OXIDE 1W 4.7	
R4505	ERX1SJ4R7P	METAL OXIDE 1W 4.7	
R4506	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4507	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4508	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4509	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4510	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R4511	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R4512	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R4513	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R4525	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4526	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4527	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4543	ERJ6GEY0R00V	MGF CHIP 1/10W 0	

R4544	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4545	ERJ6GEY0R00V	MGF CHIP 1/10W 0	
R4546	ERJ6GEY0R00V	MGF CHIP 1/10W 0	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4501	ECA1VM102B	ELECTROLYTIC 35V 1000UF	
C4502	ECA1VM102B	ELECTROLYTIC 35V 1000UF	
C4503	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4504	ECQB1H104KF	POLYESTER 50V 0.1UF	
C4505	ECQB1H104KF	POLYESTER 50V 0.1UF	
C4506	ECJ2VB1E473K	C CHIP 25V 0.047UF	
C4507	ECJ2VB1E473K	C CHIP 25V 0.047UF	
C4508	ECJ2VB1E683K	C CHIP 25V 0.068UF	
C4509	ECJ2VB1E683K	C CHIP 25V 0.068UF	
C4510	ECEA1HKN010B	ELECTROLYTIC 50V 1UF	
C4511	ECEA1HKN010B	ELECTROLYTIC 50V 1UF	
C4512	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C4513	ECJ2VF1H104Z	C CHIP 50V 0.1UF	
C4514	ECA1HM100B	ELECTROLYTIC 50V 10UF	
C4516	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4526	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C4527	ECEA1CKN100	ELECTROLYTIC 16V 10UF	
C4528	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4501	K1KA03A00008	CONNECTOR 3P	
P4503	K1KA04A00192	CONNECTOR 4P	
P4505	LSJA0473	CONNECTOR CABLE W/PLUG,5V	

RELAY

Ref. No.	Part No.	Part Name & Description	Remarks
RL4501	K6B2AGA00038	RELAY	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
83	TMM5439-1	CLAMPER	
417	XYN3+K10	SCREW W/WASHER,STEEL	
466	XTV3+10G	TAPPING SCREW,STEEL	
714	VMTS0035	CUSHION,RUBBER	
759	LSSC0634	HEAT SINK	

TOP PREVIOUS NEXT

12.4.4 NETWORK C.B.A.

TOP PREVIOUS NEXT

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4551	F2J1J3R3A003	ELECTROLYTIC 63V 3.3UF	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P4551	K1KA02A00229	CONNECTOR 2P	
P4552	K1KA02A00188	CONNECTOR 2P	
P4553	K1KA02A00008	CONNECTOR 2P	

TOP PREVIOUS NEXT

12.4.3 OPERATION C.B.A.

TOP PREVIOUS NEXT

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q6701	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q6701	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q6701	B1ADCF000075	TRANSISTOR SI PNP CHIP	
Q6702	2SB1218A0L	TRANSISTOR SI PNP CHIP	
Q6702	B1ADCF000063	TRANSISTOR SI PNP CHIP	
Q6702	B1ADCF000075	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D6701	B3AGA0000072	LIGHT EMITTING DIODE GREEN	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R6702	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6703	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6704	ERJ6GEYJ391V	MGF CHIP 1/10W 390	
R6705	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6706	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6707	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6701	LSJA0472	CONNECTOR CABLE W/PLUG,5V	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6701	EVQ11G05R	SWITCH PUSH	
SW6702	EVQ11G05R	SWITCH PUSH	
SW6703	EVQ11G05R	SWITCH PUSH	
SW6704	EVQ11G05R	SWITCH PUSH	
SW6705	EVQ11G05R	SWITCH PUSH	
SW6706	EVQ11G05R	SWITCH PUSH	

TOP PREVIOUS NEXT

12.4.5 COVER SWITCH C.B.A.

TOP PREVIOUS NEXT

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2912	LSJA0476	CONNECTOR CABLE W/PLUG,	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW2911	K0L1BA000070	SWITCH PUSH	

TOP PREVIOUS NEXT

12.4.6 THERMISTOR 1 C.B.A.

TOP PREVIOUS NEXT

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2811	D4CA35030002	THERMISTER	⚠ MKE

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2811	K1KA02A00229	CONNECTOR 2P	MKE

TOP PREVIOUS NEXT

12.4.7 THERMISTOR 2 C.B.A.

TOP PREVIOUS NEXT

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2821	D4CE31330001	THERMISTOR	⚠ MKE

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2821	K1KA02A00100	CONNECTOR 2P	MKE

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
762	LSJA0533	CONNECTOR CABLE W/PLUG	MKE

TOP PREVIOUS NEXT